

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
Richmond Division**

**THE TRUSTEES OF COLUMBIA  
UNIVERSITY IN THE CITY OF  
NEW YORK,**

**Plaintiff,**

**v.**

**Civil Action No. 3:13cv808  
UNDER SEAL**

**NORTONLIFELOCK, INC.,**

**Defendant.**

**MEMORANDUM OPINION**

This matter comes before the Court on Defendant NortonLifeLock, Inc.’s (“Norton”)<sup>1</sup> Motion for Partial Summary Judgment (the “Partial Motion for Summary Judgment”). (ECF No. 312.) Plaintiff the Trustees of Columbia University in the City of New York (“Columbia”) responded, (ECF No. 325),<sup>2</sup> and Norton replied, (ECF No. 333). This matter is ripe for disposition. The Court dispenses with oral argument because the materials before it adequately present the facts and legal contentions, and argument would not aid the decisional process.

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<sup>1</sup> Norton was previously known as “Symantec Corporation.” (See Notice of Name Change, ECF No. 291.) Many of the documents that the Parties submitted in support of the Partial Motion for Summary Judgment refer to Symantec. For consistency, throughout the opinion the Court will substitute Norton where the documents refer to Symantec.

<sup>2</sup> The day after Columbia filed its response to the Partial Motion for Summary Judgment, Columbia filed a Consent Motion for Leave to File a Corrected Version of its response (the “Consent Motion”), (ECF No. 323), and attached a corrected version of its response to the Partial Motion for Summary Judgment, (ECF No. 325). The Court granted the Consent Motion. (ECF No. 326.) Therefore, the Court will consider Columbia’s response filed at (ECF No. 325) when considering the Partial Motion for Summary Judgment.

The Court exercises jurisdiction pursuant to 28 U.S.C. §§ 1331<sup>3</sup> and 1367.<sup>4</sup> For the reasons that follow, the Court will grant in part and deny in part the Partial Motion for Summary Judgment.

### I. Factual and Procedural Background

This longstanding litigation comes before the Court on remand from the United States Court of Appeals for the Federal Circuit and following an *inter partes* review by the Patent Trial and Appeals Board (the “PTAB”) of the United States Patent and Trademark Office (the “PTO”), the outcome of which the Federal Circuit affirmed. Although the factual and procedural background of this matter are now well-known, because the Partial Motion for Summary Judgment speaks to a patent not yet substantively addressed in the Court’s prior opinions—the 8,549,643 Patent (the “643 Patent”)—the Court sets forth the relevant factual and procedural background below.

#### **A. Factual Background<sup>5</sup>**

In its Amended Complaint, Columbia brings claims under both federal and state law. (Am. Compl. ¶ 6, ECF No. 12.) Specifically, Columbia alleges that Norton’s Antivirus software

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<sup>3</sup> “The district courts shall have original jurisdiction of all civil actions arising under the Constitution, laws, or treaties of the United States.” 28 U.S.C. § 1331.

<sup>4</sup> The Court exercises supplemental jurisdiction over Columbia’s state law claims pursuant to 28 U.S.C. § 1337(a) (“[I]n any civil action of which the district courts have original jurisdiction, the district courts shall have supplemental jurisdiction over all other claims that are so related to claims in the action within such original jurisdiction that they form part of the same case or controversy . . .”). The Amended Complaint alleges pendent claims of unjust enrichment, fraudulent concealment and conversion under state law.

<sup>5</sup> In ruling on the Partial Motion for Summary Judgment, the Court will view the undisputed facts and all reasonable inferences therefrom in the light most favorable to Columbia as the nonmoving party. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

infringed on six patents<sup>6</sup> that Columbia owned—only two of which remain at issue—and seeks correction of inventorship, or in the alternative, joint inventorship for the 643 Patent (the “Federal Claims”). Columbia also brings three state law claims for relief—unjust enrichment, fraudulent concealment, and conversion—arising out of the 643 Patent, a patent owned by Norton, but which Columbia believes Norton unlawfully obtained (the “State Law Claims”). The 643 Patent is known as a Decoy or Trap-Based Patent. (Mem. Supp. Partial Mot. Summ. J. Ex. 11 “Sept. 24, 2009 Notice of Publication of Application” 2, ECF No. 313-11 (trap-based decoy is allowed).)

The Court will address each of Columbia’s State Law Claims when deciding the instant Partial Motion for Summary Judgment. As to the Federal Claims, the Court will analyze whether prosecution history estoppel bars Columbia from making certain arguments under the doctrine of equivalents. Regarding Columbia’s infringement claims for the 115 Patent and the 322 Patent,<sup>7</sup> Norton has not moved for summary judgment on Columbia’s claim for correction of

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<sup>6</sup> These six patents included: (1) Patent No. 7,487,544 (the “544 Patent”); (2) Patent No. 7,979,907 (the “907 Patent”); (3) Patent No. 7,448,084 (the “084 Patent”); (4) Patent No. 7,913,306 (the “306 Patent”); (5) Patent No. 8,074,115 (the “115 Patent”); (6) Patent No. 8,601,322 (the “322 Patent”). (See Am. Compl. ¶ 1, ECF No. 12.) The Federal Circuit described the patents as follows:

The patents can be grouped into three families. The [ ]544 and [ ]907 patents share the same specification and relate to *detecting malicious email attachments*. The [ ]084 and [ ]306 patents share the same specification, and relate to a method for *detecting intrusions in the operation of a computer system*. The [ ]115 and the [ ]322 patents also share a specification and relate to *detecting anomalous program executions*.

*Trs. of Columbia Univ. in the City of New York v. Symantec Corp.*, 811 F.3d 1359, 1362 (Fed. Cir. 2016). Of these six patents, only the claims relating to the 115 Patent and the 322 Patent remain before the Court.

<sup>7</sup> Counts Five and Six of the Amended Complaint.

inventorship of the 643 Patent (Count Ten), or in the alternative, joint inventorship of the 643 Patent (Count Eleven)—the two remaining Federal Claims.

The Court will first present the factual background relevant to the State Law Claims. Norton's challenges to these claims arise out of a Mutual Non-Disclosure Agreement signed by Columbia and Norton's predecessor entity, Symantec. To address Norton's challenges, the Court must also introduce the discussions between two professors at Columbia, Drs. Salvatore Stolfo and Angelos Keromytis, and individuals who worked with Norton's predecessor entity. (See Am. Compl. ¶¶ 11–12, ECF No. 12.) Those discussions culminated in a series of proposals which allegedly became the 643 Patent and several patent applications by Columbia.

Following this discussion, the Court will turn to the Federal Infringement Claims, which require the Court to look to the prosecution history of the 115 and 322 Patents.

### **1. Factual Background as to the State Law Claims**

#### **a. In 2004, Columbia and Norton Enter into the Mutual Non-Disclosure Agreement**

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On November 29, 2004, Columbia and Norton entered into a “Mutual Non-Disclosure Agreement” (the “NDA”), governed by New York law, identifying that they wished to “disclose and to receive the confidential information of the other Party.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 2, 5,<sup>8</sup> ECF No. 313-1.) Specifically, Columbia and Norton recognized that “[t]he purpose for the disclosure/exchange of Confidential Information between [Norton] [and] Dr. Stolfo is facilitating discussions between the parties regarding a possible collaboration.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 3, ECF No. 313-1.)

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<sup>8</sup> The indicated page number of each exhibit references the page number as assigned by the Court's CM/ECF System.

The NDA defined “Confidential Information” as “information not generally known to the public, in writing, oral, or in any other form . . . that a Party marks as confidential, proprietary or other such marking.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 2, ECF No. 313-1.) The NDA identified a non-exhaustive list of items that could be considered Confidential Information, including “technical information, discoveries, methodologies, ideas, designs, concepts, drawings, specifications, techniques, models, data, software code, algorithms, documentation,” among others. (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 2, ECF No. 313-1.)

The NDA specified when information could no longer be considered Confidential Information. (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 2, ECF No. 313-1.) In relevant part, it stated that “Confidential Information shall not include that information that the Receiving Party can establish: (i) is, or has subsequently become, rightfully in the public domain without the Receiving Party’s breach of any obligation owed to the Disclosing Party . . . .” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 2, ECF No. 313-1.)

The NDA applied some restrictions to disclosures by the Parties. For instance, the NDA restricted the “[t]he Receiving Party” from “disclos[ing] any Confidential Information to third parties for five (5) years following the effective date of this Agreement.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 3, ECF No. 313-1.) Similarly, the NDA provided in that same paragraph, “[t]he Receiving Party agrees not to publish, disclose, or allow disclosure to others of, (i) any Confidential Information, in whole or in part.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 3, ECF No. 313-1.) In a separate paragraph, Columbia and Norton agreed that “[t]he Parties shall use Confidential Information only for the Purpose for which it was disclosed and shall not use or exploit such information for their own benefit or the benefit of a third party

without the prior written consent of the Disclosing Party.” (Mem. Supp. Partial Mot. Summ. J. Ex. 1 “NDA” 3, ECF No. 313-1.)

**b. In 2006, Columbia and Norton Collaborate on the 2006 NICECAP Proposal**

On May 3, 2006, Brian Witten, a Norton employee, contacted Columbia professors Dr. Keromytis and Dr. Stolfo about the possibility of collaborating on a new proposal for the National Intelligence Community Enterprise Cyber Assurance Program (the “2006 NICECAP Proposal”). (Mem. Supp. Partial Mot. Summ. J. Ex. 2 “May 4, 2006 Email from Witten to Stolfo” 2, ECF No. 314-1.) Witten explained that [REDACTED]

[REDACTED] (Mem. Supp. Partial Mot. Summ. J. Ex. 2 “May 4, 2006 Email from Witten to Stolfo” 2, ECF No. 314-1.) That same day, Dr. Keromytis replied, saying that [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. C “May 4, 2006 Email from Keromytis to Witten” 3, ECF No. 320-2.) Witten asked whether Norton and Columbia “[s]hould . . . work together.” The next day, May 4, 2006, Dr. Keromytis agreed that Columbia and Norton should “work together on this.” (Mem. Opp. Partial Mot. Summ. J. Ex. C “May 4, 2006 Email from Keromytis to Witten” 2, ECF No. 320-2.)

After Columbia and Norton agreed to work together, Dr. Keromytis and Dr. Stolfo exchanged drafts of the proposal with Witten. (See Mem. Opp. Partial Mot. Summ. J. Ex. D “May 12, 2006 Email from Keromytis to Witten and Stolfo,” ECF No. 320-3; Mem. Opp. Partial

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<sup>9</sup> The Court presumes that an OTA is an Other Transaction Agreement. (See Mem. Supp. Partial Mot. Summ. J. Ex. 8 “Aug. 29, 2006 NICECAP Final Proposal” 26, ECF No. 314-4.)

<sup>10</sup> The Court presumes that IPR means intellectual property rights. (See Mem. Supp. Partial Mot. Summ. J. Ex. 8 “Aug. 29, 2006 NICECAP Final Proposal” 26, ECF No. 314-4.)

Mot. Summ. J. Ex. E “May 14, 2006 Email from Keromytis to Witten and Stolfo,” ECF No. 320-4.) Dr. Stolfo testified in his deposition that he had conversations with Brian Witten. (See Mem. Opp. Partial Mot. Summ. J. Ex. B “Stolfo Dep.” 5, ECF No. 320-1.)<sup>11</sup> Dr. Keromytis also stated that he had engaged in discussions with Norton. (See Mem. Opp. Partial Mot. Summ. J. Ex. F “Keromytis Dep.” 4, ECF No. 321-7.)

On May 22, 2006, roughly three weeks after initially contacting Dr. Stolfo and Dr. Keromytis, Witten submitted the draft proposal. (Mem. Supp. Partial Mot. Summ. J. Ex. 5 “May 22, 2006 Email from Witten to Stolfo” 2, ECF No. 314-2; *see generally* Mem. Supp. Partial Mot. Summ. J. Ex. 6 “May 22, 2006 NICECAP Draft Proposal,” ECF No. 314-3.) On August 29, 2006, over three months later, Witten submitted the Final 2006 NICECAP Proposal. (See Mem. Supp. Partial Mot. Summ. J. Ex. 8 “Aug. 29, 2006 NICECAP Final Proposal” 2, 26, ECF No. 314-4.) Columbia and Norton entitled the 2006 NICECAP Final Proposal “Honeypots for Insider Threats on Closed Intelligence Networks.” (Mem. Supp. Partial Mot. Summ. J. Ex. 8 “Aug. 29, 2006 NICECAP Final Proposal” 2, ECF No. 314-4.) As noted above, this “honeypot” technology can be called Decoy or Trap-Based defenses.

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<sup>11</sup> Either party may submit as evidence “depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion only), admissions, interrogatory answers, or other materials” to support a factual assertion made in a motion for summary judgment. Fed. R. Civ. P. 56(c)(1)(A).

c. **One Week Before Norton Submitted the 2006 NICECAP Final Proposal, Columbia filed the 898 Provisional Application, Which a Later Patent (the 191 Patent) Incorporates in Its Entirety**

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On May 31, 2006, one week before Witten submitted the 2006 NICECAP Final Proposal, Dr. Keromytis and Dr. Stolfo filed a provisional patent application<sup>12</sup>—U.S. Provisional Patent Application 60/8099898 (the “898 Provisional Application”). (Mem. Supp. Partial Mot. Summ. J. Ex. 7 “898 Application” 1, ECF No. 313-7.) In the body of the application, the 898 Provisional Application incorporates the ideas embodied in the May 22, 2006 NICECAP Draft Proposal. (Compare Mem. Supp. Partial Mot. Summ. J. Ex. 6 “May 22, 2006 NICECAP Draft Proposal,” ECF No. 314-3, with Mem. Supp. Partial Mot. Summ. J. Ex. 7 “898 Application,” ECF No. 313-7.) As Appendix A, the 898 Provisional Application incorporates the ideas embodied in the earlier May 14, 2006 NICECAP Draft Proposal.<sup>13</sup> (Compare Mem. Supp.

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<sup>12</sup> The U.S. Patent and Trademark Office defines a provisional patent application as:

[A] U.S. national application filed in the USPTO under 35 U.S.C. § 111(b). A provisional application is not required to have a formal patent claim or an oath or declaration. Provisional applications also should not include any information disclosure (prior art) statement since provisional applications are not examined. A provisional application provides the means to establish an early effective filing date in a later filed nonprovisional patent application filed under 35 U.S.C. § 111(a).

United States Patent and Trademark Office, *Provisional Application for Patent*, <https://www.uspto.gov/patents/basic/types-patent-applications/provisional-application-patent>.

The PTO does not publish provisional patent applications, and they are an application, not a patent. Section 122 of Title 35 of the United States Code governs the confidential status of applications and the publication of applications. See 35 U.S.C. § 122. Section 122(b)(2)(A) provides that “[a]n application shall not be published if that application is . . . (iii) a provisional application.” 35 U.S.C. § 122(b)(2)(A).

<sup>13</sup> Norton alleges that the 898 Provisional Application included the May 22, 2006 NICECAP Draft Proposal “in the body of the ‘898 [Provisional] Application” and the May 14, 2006 NICECAP Draft Proposal “in Appendix A.” (Mem. Supp. Partial Mot. Summ. J. 3–4, ECF No. 314.) Norton identifies that, when including them in the 898 Provisional Application, Dr. Keromytis and Dr. Stolfo excluded only the cover page and personal section of the May 22, 2006

Partial Mot. Summ. J. Ex. 6 “May 22, 2006 NICECAP Draft Proposal,” ECF No. 314-3, *with* Mem. Supp. Partial Mot. Summ. J. Ex. 7 “898 Application” 14–18, ECF No. 313-7.)

On May 31, 2007—one year after Columbia filed the 898 Provisional Application and after Witten submitted the 2006 NICECAP Final Proposal—Columbia filed a patent application with the World Intellectual Property Organization. (Mem. Supp. Partial Mot. Summ. J. Ex. 9 “Dec. 13, 2007 Published Proposal” 2, ECF No. 313-9.) Approximately seven months later, on December 13, 2007, this application published as the WO 2007/143011 Patent. (Mem. Supp. Partial Mot. Summ. J. Ex. 9 “Dec. 13, 2007 Published Proposal” 2, ECF No. 313-9.) Importantly, the WO 2007/143011 Patent identifies the 898 Provisional Application as “Priority Data.” (Mem. Supp. Partial Mot. Summ. J. Ex. 9 “Dec. 13, 2007 Published Proposal” 2, ECF No. 313-9.) The WO 2007/143011 Patent states that it “claims the benefit” of the 898 Provisional Application and “incorporate[s] [it] by reference herein in its entirety.” (Mem. Supp. Partial Mot. Summ. J. Ex. 9 “Dec. 13, 2007 Published Proposal” 3, ECF No. 313-9.)

Approximately two years after the WO 2007/143011 Patent issued and two-and-a-half years after Columbia filed the 898 Provisional Application, on September 24, 2009, the PTO issued the 2009/0241191 Patent (the “191 Patent”). (Mem. Supp. Partial Mot. Summ. J. Ex. 10 “191 Application” 2, ECF No. 313-10.) The 191 Patent lists Dr. Keromytis and Dr. Stolfo as the named inventors. (Mem. Supp. Partial Mot. Summ. J. Ex. 10 “191 Application” 2, ECF No.

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NICECAP Draft Proposal and the organizational capabilities section of the May 14, 2006 NICECAP Draft Proposal. (Mem. Supp. Partial Mot. Summ. J. 4, ECF No. 314.)

Although Columbia disputes, as a matter of law, that the 898 Provisional Application “became publicly available with the publication of International Publication No. WO 2007/143011,” it does not dispute Norton’s contention that the 898 Provisional Application contained the ideas found in the two drafts of the 2006 NICECAP Proposal. (See Mem. Opp. Partial Mot. Summ. J. 3, ECF No. 325 (stating that “Columbia does not dispute Norton’s Rule 56 Statement of Undisputed Facts, except for the following facts” and not listing this fact as a disputed fact).)

313-10.) The 191 Patent identifies the 898 Provisional Application as “Related U.S. Application Data” and “incorporate[s] [it] by reference herein in its entirety.” (Mem. Supp. Partial Mot. Summ. J. Ex. 10 “191 Application” 2, 5, ECF No. 313-10.)

The PTO issued a “Notice of Publication of Application” stating that the 191 Patent “will be electronically published as a patent application publication pursuant to 37 CFR 1.211.”<sup>14</sup> (Mem. Supp. Partial Mot. Summ. J. Ex. 11 “Sept. 24, 2009 Notice of Publication of Application” 2, ECF No. 313-11.) The Notice of Publication of Application also recognized that “[t]he publication may be accessed through the [PTO’s] publically [sic] available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.” (Mem. Supp. Partial Mot. Summ. J. Ex. 11 “Sept. 24, 2009 Notice of Publication of Application” 2, ECF No. 313-11.) The Notice of Publication of Application identified the date of publication as September 24, 2009.<sup>15</sup> (Mem. Supp. Partial Mot. Summ. J. Ex. 11 “Sept. 24, 2009 Notice of Publication of Application” 2, ECF No. 313-11.)

**d. In 2010, Columbia and Norton Collaborate on the 2010 DARPA Proposal**

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In early 2010, after Witten submitted the 2006 NICECAP Final Proposal and after Columbia had filed the 898 Provisional Application and received the WO 2007/143011 Patent

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<sup>14</sup> Section 1.211, of Title 37 of the Code of Federal Regulations governs when the PTO will publish a patent application. In relevant part, it provides:

(a) Each U.S. national application for patent filed in the Office under 35 U.S.C. 111(a) and each international application in compliance with 35 U.S.C. 371 will be published promptly after the expiration of a period of eighteen months from the earliest filing date for which a benefit is sought under title 35, United States Code.

37 C.F.R. § 1.211.

<sup>15</sup> On March 10, 2010, nearly six months after the PTO issued the 191 Patent, Dr. Stolfo recognized that the 191 Patent “ha[d] been made public.” (Mem. Supp. Partial Mot. Summ. J. Ex. 12 “Mar. 10, 2010 Email from Stolfo to Habana” 2, ECF No. 314-5.)

and the 191 Patent, Marc Dacier, a Norton employee, contacted Dr. Stolfo and Dr. Keromytis about the possibility of collaborating on another project. The 2010 project was called the Defense Advance Research Projects Agency's ("DARPA") Cyber Genome Program (the "2010 DARPA Proposal"). (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 4-5, ECF No. 320-6.) Specifically, Dacier stated that [REDACTED]

[REDACTED] (Mem. Opp.

Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 5, ECF No. 320-6.) However, he stated that [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 5, ECF No. 320-6.) Dacier specified that Darren Shou, another Norton employee, [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 5, ECF No. 320-6.)

In response, Dr. Stolfo expressed concern about collaborating on the 2010 DARPA Proposal based on the [REDACTED] and because [REDACTED] [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 4, ECF No. 320-6.) Several days later, on February 27, 2010, Dr. Stolfo recognized that information he had [REDACTED]

[REDACTED] [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 3, ECF No. 320-6.) Columbia and Norton agreed to work together to submit "a joint proposal to DARPA" [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H "Mar. 1, 2010 Email from Keromytis to Stolfo" 26, ECF No. 320-6.) On March 2, 2010, Shou recognized in an email sent to Dacier, a fellow Norton employee, that [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. H “Mar. 1, 2010 Email from Keromytis to Stolfo” 11, ECF No. 320-6.)

Shou later admitted in his deposition that [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. G “Shou Dep.” 19, ECF No. 320-5.) Shou stated that he [REDACTED]  
[REDACTED]

[REDACTED] (See, e.g., Mem. Opp. Partial Mot. Summ. J. Ex. G “Shou Dep.” 19–20, ECF No. 320-5.)

e. **Norton Files a Provisional Patent Application That Later Becomes the Basis of the 643 Patent Listing Only Norton Employees as Inventors**

On March 18, 2010, approximately six months after the PTO published the 191 Patent and after Columbia had agreed to work on the 2010 DARPA Proposal with Norton, Shou prepared an Invention Disclosure Form<sup>16</sup> entitled “Integrating Decoys and Data Loss Prevention.” (Mem. Supp. Partial Mot. Summ. J. Ex. 19 “Bailey Opening Report” 9, ECF No. 314-7; Mem. Opp. Partial Mot. Summ. J. Ex. G “Shou Dep.” 7, ECF No. 320-5.) As to the information included on the Invention Disclosure Form, Shou stated that he [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. G “Shou Dep.” 9, ECF No. 320-5.) [REDACTED]  
[REDACTED]

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<sup>16</sup> [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. G “Shou Dep.” 4, ECF No. 320-5.)

[REDACTED]  
(Mem. Opp. Partial Mot. Summ. J. Ex. G "Shou Dep." 9, ECF No. 320-5.) [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. L "Larson Dep." 4, ECF No. 320-10.)

On April 2, 2010, Norton filed a provisional patent application—Application Number 61/320,609 (the "609 Provisional Application")—with the PTO based on the ideas Shou set forth in the Invention Disclosure Form. (Mem. Opp. Partial Mot. Summ. J. Ex. R "Apr. 2, 2010 Provisional Patent Application" 2, ECF No. 321-19.) This provisional patent application listed only Dacier and Shou—two Norton employees—as inventors. (Mem. Opp. Partial Mot. Summ. J. Ex. R "Apr. 2, 2010 Provisional Patent Application" 5, ECF No. 321-19.)

Approximately one year later, on April 4, 2011, Norton filed a non-provisional patent application—U.S. Patent Application No. 13/066,013 (the "013 Non-Provisional Application")—entitled "Integrating Decoys and Data Loss Prevention." (Mem. Supp. Partial Mot. Summ. J. Ex. 13 "Non-Provisional 643 Application Apr. 4, 2011" 3, ECF No. 313-13.) To ensure that the 013 Non-Provisional Application would *not* be publicly available, Norton also filed a Nonpublication Request Under 35 U.S.C. § 122(b)(2)(B)(i).<sup>17</sup> *See* 35 U.S.C. § 122(b)(2)(B)(i). The 013 Non-Provisional Application listed Shou, the Norton employee who filed the Invention Disclosure Form, as the first named inventor. (*See* Mem. Supp. Partial Mot. Summ. J. Ex. 13 "Non-Provisional 643 Application Apr. 4, 2011" 4, ECF No. 313-13.)

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<sup>17</sup> Although non-provisional patent applications are generally published, *see* 35 U.S.C. § 122(b)(1)(A), because Norton filed a request that the 013 Non-Provisional Application not publish and certified that the invention disclosed in the 013 Non-Provisional Application had not and would not be the subject of an application filed in another country, or under a multilateral international agreement, the 013 Non-Provisional Application did not publish, *see* 35 U.S.C. § 122(b)(2)(B)(i).

On October 1, 2013, the PTO issued the 643 Patent (the subject of the state law claims here). (Mem. Opp. Partial Mot. Summ. J. Ex. Z “643 Patent” 3, ECF No. 321-27.) The 643 Patent lists only Shou—a Norton employee—as the inventor and identifies the 609 Provisional Application which Norton filed in 2010 as “Related U.S. Application Data.” (Mem. Opp. Partial Mot. Summ. J. Ex. Z “643 Patent” 3, ECF No. 321-27.) The 643 Patent “incorporate[s] by reference” the 609 Provisional Application. (Mem. Opp. Partial Mot. Summ. J. Ex. Z “643 Patent” 15, ECF No. 321-27.) [REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. M “Dacier Dep.” 4, ECF No. 320-11.)

**f. Columbia Answers Norton’s Inquiries in the Affirmative as to Whether Dr. Stolfo and Dr. Keromytis Consider Themselves to Be the Inventors of the Ideas in the Invention Disclosure Form**

Before the PTO issued the 643 Patent, and before Norton filed the 609 Provisional Application or the 013 Non-Provisional Application, Norton contacted Columbia to alert Columbia that it planned to file for patent protection.

On March 24, 2010, Delos Larson, a lawyer for Norton, contacted Dr. Stolfo and Dr. Keromytis via email to tell them that Norton planned to seek patent protection for the ideas expressed in the Invention Disclosure Form (incorporating information from the NICECAP and DARPA proposals) Shou prepared, and to ask whether they considered themselves to be inventors of any of the technology disclosed. (Mem. Opp. Partial Mot. Summ. J. Ex. K “Mar. 24, 2010 Email from Larson to Keromytis, Stolfo, and Habana” 2, ECF No. 320-9.) [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. K “Mar. 24, 2010 Email from Larson to Keromytis, Stolfo, and Habana” 3–5, ECF No. 320-9.) In the email, Larson called himself a “non-evil lawyer at [Norton]” and stated that Norton “realize[d] [it] did not invent the decoy creation technique.” (Mem. Opp. Partial Mot.

Summ. J. Ex. K “Mar. 24, 2010 Email from Larson to Keromytis, Stolfo, and Habana” 2, ECF No. 320-9.) Larson [REDACTED] (Mem. Opp.

Partial Mot. Summ. J. Ex. K [REDACTED]

[REDACTED] ECF No. 320-9.) He stated [REDACTED]

(Mem. Opp. Partial Mot. Summ. J. Ex. K “Mar. 24, 2010 Email from Larson to Keromytis, Stolfo, and Habana” 2, ECF No. 320-9.)

[REDACTED]

[REDACTED] (Mem. Opp. Partial Mot.

Summ. J. Ex. N “Mar. 24, 2010 Email from Larson to Keromytis, Stolfo, and Habana” 6, ECF No. 321-15.) [REDACTED] (Mem. Opp.

Partial Mot. Summ. J. Ex. P “Mar. 24, 2010 Email from Keromytis to Larson” 2, ECF No. 320-13.)

On the same day that Larson contacted Dr. Stolfo and Dr. Keromytis, Shou—the now-listed inventor of the 643 Patent and the Norton employee who prepared the Invention Disclosure Form—also emailed Dr. Stolfo and Dr. Keromytis to inform them that Norton’s legal team was considering patenting [REDACTED]

(Mem. Opp. Partial Mot. Summ. J. Ex. Q “Mar. 24, 2010 Email from Keromytis to Shou” 2, ECF No. 320-14.) Shou told Dr. Stolfo and Dr. Keromytis that he “added [their] names (along with [Dacier] and [himself]) to the list of co-inventors.” (Mem. Opp. Partial Mot. Summ. J. Ex. Q “Mar. 24, 2010 Email from Keromytis to Shou” 2, ECF No. 320-14.)

Also on March 24, 2010, Dacier, another Norton employee and the Norton employee who reached out to Columbia about collaborating on the 2010 DARPA Proposal, told Dr. Stolfo and Dr. Keromytis that Norton “twisted [his] arm very hard to accept the idea of producing a patent.”

(Mem. Opp. Partial Mot. Summ. J. Ex. Q “Mar. 24, 2010 Email from Keromytis to Shou” 8,

ECF No. 320-14.) Dacier stated [REDACTED]

[REDACTED] last thing [Dacier] wanted was to start [Norton and Columbia’s] possible collaboration on the wrong foot.” (Mem. Opp. Partial Mot. Summ. J. Ex. Q “Mar. 24, 2010 Email from Keromytis to Shou” 9, ECF No. 320-14.) Dr. Stolfo replied that he wanted to continue working on the 2010 DARPA Proposal with Norton. (See Mem. Opp. Partial Mot. Summ. J. Ex. Q “Mar. 24, 2010 Email from Keromytis to Shou” 8, ECF No. 320-14 (stating “None of it is a real problem. Let’s just bid and get on with it.”).)

A few days later, on April 2, 2010, Norton filed the 609 Provisional Application, listing only Dacier and Shou as inventors. Dr. Stolfo and Dr. Keromytis were not listed as inventors [REDACTED] despite being told by Norton that they would be listed.

(Mem. Opp. Partial Mot. Summ. J. Ex. R “Apr. 2, 2010 Provisional Patent Application” 5, ECF No. 321-19.) Three days later, on April 5, 2010, Larson again emailed Dr. Stolfo and Dr. Keromytis to inform them that Norton “is filing a provisional patent application this week based on the [Invention Disclosure Form].” (Mem. Opp. Partial Mot. Summ. J. Ex. S “Apr. 28, 2010 Email from Larson to Chu” 2, ECF No. 321-20.) The April 5, 2010 email did not mention that Norton had already filed the 609 Provisional Application on April 2, 2010. (See Mem. Opp. Partial Mot. Summ. J. Ex. S “Apr. 28, 2010 Email from Larson to Chu” 2, ECF No. 321-20.)

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

(Mem. Opp. Partial Mot. Summ. J. Ex. T “Mar. 31, 2011 Email from Kimes to Stolfo *et al.*” 2, ECF No. 320-15.)

[REDACTED]  
[REDACTED] (See Mem. Opp. Partial Mot.

Summ. J. Ex. T "Mar. 31, 2011 Email from Kimes to Stolfo *et al.*" 2, ECF No. 320-15.) [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. T "Mar. 31, 2011 Email from Kimes to Stolfo *et al.*" 2, ECF No. 320-15.) [REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. U "Draft Patent Application" 2, ECF No. 320-16.)  
[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. X "Mar. 31, 2011 Email from Shou to Dacier" 3, ECF No. 320-18)  
[REDACTED]  
[REDACTED]

[REDACTED] (Mem. Opp. Partial Mot. Summ. J. Ex. V "Apr. 1, 2011 Email from Shou to Murphy" 2, ECF No. 320-17.)

Kimes, however, never responded to Dr. Stolfo, Dr. Keromytis, or anyone at Columbia. (Mem. Opp. Partial Mot. Summ. J. Ex. W "Kimes Dep." 9-10, ECF No. 321-24.) Kimes testified that he

[REDACTED]

(Mem. Opp. Partial Mot. Summ. J. Ex. W "Kimes Dep." 11, ECF No. 321-24.)

As stated above, on April 4, 2011, Norton filed the 013 Non-Provisional Application, and on October 1, 2013, the PTO issued the 643 Patent.

**2. Factual Background as to the Federal Claims: Prosecution History of the 115 and 322 Patents**

The Court turns now to the factual background relevant to Columbia's Federal Claims, specifically the prosecution history of the 115 Patent and the 322 Patent.

**a. Columbia's Amendments to the 115 Patent Before the PTO**

On June 15, 2009, approximately three months before the PTO issued the 191 Patent, Columbia filed Application Number 12/091,150, which would later become the 115 Patent.

(Mem. Opp. Partial Mot. Summ. J. Ex. AA "115 Patent Prosecution History" 24, ECF No. 321-28.)

On August 23, 2010, the PTO rejected "[c]laims 1–7, [and] 22 . . . under 35 U.S.C. § 102(e)<sup>[18]</sup> as being anticipated by Vu (U.S. Patent number 7496898)." (Mem. Opp. Partial

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<sup>18</sup> Section 102(e) of Title 35 of the United States Code describes the conditions of patentability and speaks to novelty. *See* 35 U.S.C. § 102(e). At the time the PTO rejected the proposed patent claims of the 115 Patent, Section 102(e) stated in relevant part:

A person shall be entitled to a patent unless—

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

35 U.S.C. § 102(e)(2010) (footnote omitted).

Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 24, 27, ECF No. 321-28.) The PTO explained in part that “Vu disclose[d] creating a combined model from at least two models created using different computers.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 27, ECF No. 321-28.) The PTO also recognized that “Vu disclose[d] creating a combined model from at least two models created at different times.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 27, ECF No. 321-28.)

On February 23, 2011, Columbia responded to the PTO’s rejection of certain claims. (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 10, 22, ECF No. 321-28.) In relevant part, Columbia amended certain claims in the patent application and made remarks in response to the PTO’s rejection. (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 10, ECF No. 321-28.) Among other changes, Columbia amended claims 1, 11, 21 to state that “upon identifying the anomalous function call, notifying an application community that includes a plurality of computers of the anomalous function call.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 11–13, ECF No. 321-28.) In its remarks, Columbia stated that “[a]mendments to the claims are being made solely to expedite prosecution and do not constitute an acquiescence to any of the Examiner’s objections or rejections.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 17, ECF No. 321-28.) As to the amendments to claims 1, 11, and 21, specifically, Columbia noted that “nothing in Vu shows or suggests the feature of ‘executing at least a part of the program in an emulator.’ Instead of using an emulator that executes at least a part of the program, Vu relies on examining the code for generic function calls.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 19, ECF No. 321-28.)

Columbia continued by saying that “Vu also does not show or suggest ‘comparing a function call made in the emulator to a model of function calls for the at least a part of the program.’” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 19, ECF No. 321-28 (emphasis in original).) As to the specific language added to claims 1, 11, and 21, Columbia pointed out that “[a]s described in [Columbia’s] specification, ‘the application community member that detects or predicts the fault may notify the other application community members. Other application members that have succumbed to the fault may be restarted with the protection mechanisms or fixes generated by the application member that detected the fault.’” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 19, ECF No. 321-28 (citation omitted).) Columbia argued that “Vu does not show or suggest notifying an application community of the anomalous function call. At most, Vu mentions providing an error message that includes information about the failure mode.” (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 19, ECF No. 321-28.)

On March 17, 2011, in response to these amendments and remarks, the PTO issued a Notice of Allowability and approved the revised claims. (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 7, 9, ECF No. 321-28.) On December 6, 2011, the PTO issued the 115 Patent. (Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 4, ECF No. 321-28.) Revised claims 1, 11, and 21 became claims 1, 11, and 21 of the 115 Patent.<sup>19</sup> (Compare Mem. Opp. Partial Mot. Summ. J. Ex. AA “115 Patent Prosecution History” 11–13, ECF No. 321-28, with 115 Patent 23, 24, ECF No. 12-5.)

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<sup>19</sup> Although the PTAB later invalidated claims 1, 11, and 21 of the 115 Patent during the IPR proceedings, claims 2, 9, and 10, claims that depend upon the method of claim 1, remain at issue. Similarly, claims 12, 19, and 20, claims that depend upon the medium of claim 11, also remain at issue. (See *Symantec Corp. v. Trs. of Columbia Univ. in the City of New York*, IPR 2015-00377 (P.T.A.B. June 30, 2016), ECF No. 199-22.)

**b. Columbia's Amendments to the 322 Patent Before the PTO**

Approximately two weeks before the PTO issued the 115 Patent, on November 21, 2011, Columbia filed Application Number 13/301,741, which became the 322 Patent. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 20, ECF No. 321-29.)

In its September 7, 2012 Detailed Action, the PTO recognized that “[t]his Application is a continuation of U.S. Patent Application number 12/091150 filed June 15, 2009”—the application that ripened into the 115 Patent. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 22, ECF No. 321-29.) The PTO also stated that Columbia has “canceled claims 1–42 of the previously filed application and therefore will not be considered by the Examiner.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 22, ECF No. 321-29.) The PTO rejected the remaining claims (claims 43–63) for a variety of reasons, including “nonstatutory double patenting over claims 1–10 & 32–41 of [the 115 Patent] since the claims, if allowed, would improperly extend the ‘right to exclude’ already granted in patent.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 23, ECF No. 321-29.)

As to some of the proposed patent claims, the PTO rejected the proposed patent claims based on two prior patents. (See Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 25–28, ECF No. 321-29.) In explaining why it rejected each of these proposed patent claims, the PTO stated that the prior patents disclosed certain features found in the proposed patent claims. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 25–28, ECF No. 321-29.) These included the general method undertaken in the proposed patent claims; “modifying the function call so that the function call becomes non-anomalous;” and, “generating a virtualized error in response to the function call being identified

as being anomalous.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 25–26, ECF No. 321-29.)

Although the PTO recognized that one of the prior patents “disclose[d] that the model reflects normal activity of the at least a portion of the program,” the PTO did not reject any of the proposed patent claims based on how the patent created the model. (See Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 26–27, ECF No. 321-29.)

The PTO observed that “[c]laims 44, 45, 54, & 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 28, ECF No. 321-29.) These proposed patent claims disclosed *how* the model would be created under the 322 Patent. For instance, proposed claim 44 and 54 included the limitation that “the model is a combined model created from at least two models created using different computers.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 10, ECF No. 321-29.) Proposed claims 45 and 55 included the limitation that “the model is a combined model created from at least two models created at different times.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 10, ECF No. 321-29.)

On January 4, 2013, Columbia responded to the PTO’s rejection of its claims. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 9, 19, ECF No. 321-29.) In relevant part, Columbia amended claim 44 and 54 to be independent claims and cancelled claims 45 and 55. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 10, 12, ECF No. 321-29.) Columbia incorporated the limitations of claims 45 and 55 into amended independent claims 43 and 53. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent

Prosecution History” 10–11, 17, ECF No. 321-29.) The amended claims 44 and 54 included the limitation that the “model is a combined model created from at least two models created using different computers.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 10, 12, ECF No. 321-29.) The amended claims 43 and 53 included the limitation “wherein the model is a combined model created from at least two models created at different times.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 10–11, ECF No. 321-29.) Thus, Columbia proceeded with the amended claims 43, 53, 44, and 54, but not 45 and 55.

In the Summary of its Reply, Columbia stated that “[a]mendments to the claims are being made solely to expedite prosecution and do not constitute an acquiescence to any of the Examiner’s objections or rejections.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 15, ECF No. 321-29.) When discussing its amendments further, Columbia recognized that the PTO rejected “[c]laims 43, 46–53, and 56–63 . . . under 35 U.S.C. § 103(a)<sup>[20]</sup> as allegedly being unpatentable over Hasse in view of Vu”—two prior patents. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 17, ECF No. 321-29.) Columbia, noting its disagreement, asserted that “to facilitate allowance, [Columbia] . . . amended independent claims 43 to incorporate dependent claim 45 and independent claim 53 to

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<sup>20</sup> Section 103 of Title 35 of the United States Code governs conditions for patentability over non-obvious subject matter. 35 U.S.C. § 103. When the PTO rejected certain proposed patent claims of the 322 Patent, Section 103(a) stated:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35 U.S.C. § 103(a) (2012).

incorporate dependent claim 55, which the Examiner indicated to be allowable.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 17, ECF No. 321-29.) Columbia also stated that it “wish[ed] to thank the Examiner for indicating that dependent claims 44 and 54 contain allowable subject matter and would be allowable if rewritten in independent form including all of the limitations of the based claim and any intervening claim.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 18, ECF No. 321-29.) Therefore, Columbia “amended dependent claims 44 and 54 to include the limitations of independent based claims 43 and 53.” (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 18, ECF No. 321-29.) These limitations spoke to how the model would be created under the patent.

On May 28, 2013, the PTO issued a Notice of Allowability and approved, in relevant part, claims 43, 44, 53, and 54. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 2, 7, ECF No. 321-29.) These claims became claims 1, 2, 10, and 11<sup>21</sup> of the 322 Patent. (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 8, ECF No. 321-29.)

## **B. Procedural Background**

Having considered the factual background that affects the State Law Claims and the Federal Claims, the Court turns now to the procedural background of this matter.

The Court provided an in-depth discussion of the procedural history in its prior Memorandum Opinions—the *Inter Partes* Review Opinion, (ECF No. 251); the Markman

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<sup>21</sup> Although the PTO approved claims 1, 2, 10, and 11 of the 322 Patent, (Mem. Opp. Partial Mot. Summ. J. Ex. BB “322 Patent Prosecution History” 8, ECF No. 321-29), following the IPR proceedings only claims 2 and 11 remain pending before the Court, (*see Symantec Corp. v. Trs. of Columbia Univ. in the City of New York*, IPR 2015-00377, 33 (P.T.A.B. June 30, 2016), ECF No. 199-22.)

Opinion, (ECF No. 253); and, the Court’s opinion addressing Norton’s Rule 12(c) Motion, (ECF No. 288)—and incorporates that description here. The Court assumes familiarity with those decisions and provides only a summary of the relevant procedural history prior to the Partial Motion for Summary Judgment.

1. 2014 Proceedings

After Columbia filed its Amended Complaint, (ECF No. 12), Norton filed a Partial Motion to Dismiss (the “Motion to Dismiss”), (ECF No. 18), and an Answer, (ECF No. 20), asserting, in relevant part, that the patent claims included in Columbia’s patents do not constitute valid patent claims under 35 U.S.C. § 101.<sup>22</sup> In the Motion to Dismiss, Norton requested that the Court dismiss Columbia’s conversion, fraudulent concealment, and unjust enrichment claims—the same claims that it challenges in the instant Partial Motion for Summary Judgment. (Compare Mem. Supp. Mot. Dismiss 2, ECF No. 19; with Mem. Supp. Partial Mot. Summ. J. 2, ECF No. 314.) In the Motion to Dismiss, Norton argued that federal patent law preempts each of the three State Law Claims. (See Mem. Supp. Mot. Dismiss 7–14, ECF No. 19.)

The Court denied the Motion to Dismiss in full. (Apr. 2, 2014 Mem. Op., ECF No. 67.) As to the unjust enrichment and fraudulent concealment claims, the Court concluded that

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<sup>22</sup> Based on the Court’s decision in the *Inter Partes* Review Opinion, Norton may no longer support its invalidity affirmative defense with the prior art identified in its invalidity contentions but not raised in its petitions for *inter partes* review before the PTAB. *Trs. of Columbia Univ. in the City of New York v. Symantec Corp.*, 390 F. Supp. 3d 665, 681 (E.D. Va. 2019). Of course, Norton asserts other defenses which remain before the Court: limitation on damages and recovery, dedication to the public, no entitlement to an injunction or other equitable relief, unavailability of enhanced damages, unavailability of unjust enrichment, unavailability of conversion, and preemption by federal patent law.

In its decision on Norton’s Rule 12(c) Motion, the Court concluded that, taking all inferences in the light most favorable to Columbia, Norton had not shown by clear and convincing evidence that the remaining patent claims in the 115 Patent and the 322 Patent are invalid patent claims under 35 U.S.C. § 101. (See Nov. 19, 2019 Mem. Op., ECF No. 288.) The Court clarifies that any mention in that decision of those claims being “valid” was in error.

“Columbia’s right of recovery does not ‘stand as an obstacle to the accomplishment and execution of the full purposes and objectives’ of the patent laws.” (Apr. 2, 2014 Mem. Op. 19, ECF No. 67 (quoting *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979))). Specifically, the Court stated that “Columbia has alleged a confidential relationship with [Norton] that prohibited [Norton] from using confidential disclosure for its sole benefit,” and “Columbia alleges that the breach of that confidence creates a right of recovery and, if proven, allows Columbia to disgorge [Norton] of any benefit that accrued to it as a result of its wrongful conduct.” (Apr. 2, 2014 Mem. Op. 19, ECF No. 67.)

As to the conversion claim, the Court found that the conversion claim survived under either New York or Virginia law. (Apr. 2, 2014 Mem. Op. 21, ECF No. 67.) Specifically, the Court stated that

To the extent that Columbia asserts a claim for conversion of the 2006 NICECAP grant proposal drafts themselves, it has plausibly asserted a claim for conversion of tangible property. This claim is not preempted by federal law because the 2006 NICECAP grant proposal drafts conveyed no patent right to Columbia. As such, to the extent that Columbia asserts a claim for conversion that is not “dependent on a determination of patent inventorship or ownership,” it has asserted a claim for conversion that is not preempted by the federal patent laws.

(Apr. 2, 2014 Mem. Op. 22, ECF No. 67 (quoting *Gerawan Farming, Inc. v. Rehrig Pac. Co.*, No. 1:11-cv-01273, 2012 WL 691758, at \*7 (E.D. Cal. Mar. 2, 2012))). The Court also stated that it “must accept as true Columbia’s factual allegation that the 2006 NICECAP grant proposal drafts were utilized in obtaining the ‘643 Patent’ and that “[f]rom this factual allegation, the Court may reasonably infer that the 2006 NICECAP grant proposal drafts were similarly employed by [Norton] for other beneficial uses not related to obtaining a patent.” (Apr. 2, 2014 Mem. Op. 22, ECF No. 67.)

After denying the Motion to Dismiss, the Court held an initial pretrial conference. The Court presided over a Markman hearing and issued a Claim Construction Order (the “Claim Construction Order”), (ECF No. 123), and a Clarified Claim Construction Order (the “Clarified Claim Construction Order”), (ECF No. 146).

Ten days later, Columbia and Norton jointly moved the Court to issue final judgment pursuant to Federal Rule of Civil Procedure 54(b)<sup>23</sup> as to Columbia’s first through sixth claims for relief and to stay the case as to its seventh through eleventh claims construed in the Claim Construction Order. (Jt. Mot. Entry Final J. 1–2, ECF No. 148.) The Parties specifically asked the Court to enter “judgment of non-infringement on all asserted claims and [to] find[] . . . invalidity for indefiniteness of claims 1 and 16 of the ‘544 [P]atent.” *Trs. of Columbia Univ.*, 811 F.3d at 1362. The next day, the Court entered the partial final judgment requested by Columbia and Norton<sup>24</sup> (the “Partial Final Judgment Order”). (ECF No. 150.)

## **2. Appeals from the 2014 Order by Columbia and Norton (Federal Circuit and *Inter Partes* Review)**

Approximately one week later Columbia (unsuccessful below) filed its Notice of Appeal to the Federal Circuit and appealed the Court’s Partial Final Judgment Order, the Court’s original Claim Construction Order, and the Court’s Clarified Claim Construction Order. (Notice Appeal 1, ECF No. 152.) In a 2016 opinion, the Federal Circuit affirmed in part and reversed and remanded in part the Court’s grant of final judgment and its claim construction orders. *See Trs.*

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<sup>23</sup> Federal Rule of Civil Procedure 54(b) provides: “When an action presents more than one claim for relief . . . the court may direct entry of a final judgment as to one or more, but fewer than all, claims or parties only if the court expressly determines that there is no just reason for delay.” Fed. R. Civ. P. 54(b).

<sup>24</sup> The Parties requested that the Court enter partial final judgment “to allow Columbia to take an immediate appeal of” the Claim Construction Order and the Clarified Claim Construction Order. (Mem. Supp. Partial Mot. Summ. J. 8, ECF No. 199.)

of *Columbia Univ.*, 811 F.3d at 1371. The Federal Circuit upheld the judgment of non-infringement as to the 544, 907, 084, and 306 patents. *Id.* at 1366–67, 1369. With regard to the 115 and 322 patents—two of the patents subject to this Motion—the Federal Circuit “reverse[d] the district court’s construction of ‘anomalous,’” and the Court’s stipulated judgment as to the 115 and 322 patents. *Id.* at 1371. The Federal Circuit remanded for proceedings consistent with its opinion. *Id.*

After the Court issued its Partial Final Judgment Order and while the Federal Circuit considered Columbia’s appeal from that order, Norton (who prevailed below) filed petitions with the Patent Trial and Appeal Board (“PTAB”) of the United States Patent and Trademark Office (“PTO”) requesting, in relevant part, *inter partes* review of the 115 and 322 patents at issue in the litigation. (Notice Pets. *Inter Partes* Review 1, ECF No. 158.)

Norton chose to present only a subset of its grounds of purported invalidity to the PTAB and the PTAB instituted *inter partes* review on all of Norton’s asserted grounds. The PTAB issued separate final written decisions as to the 115 Patent and the 322 Patent. In these decisions, the PTAB found that, under 35 U.S.C. §§ 102 and 103, Norton had shown by a preponderance of the evidence that thirty claims of the 115 Patent—claims 1, 3–8, 11, 13–18, 21, 22, 24–29, 32, 34–39, and 42—and twenty-one claims of the 322 Patent—claims 1, 3–7, 9, 10, 12–16, 18–24, and 26—were unpatentable. Thus, only twelve claims of the 115 Patent—claims 2, 9, 10, 12, 19, 20, 23, 30, 31, 33, 40, and 41—and six claims of the 322 Patent—claims 2, 8, 11, 17, 25, and 27—remained. *Symantec Corp. v. Trs. of Columbia Univ. in the City of New York*, IPR 2015-00375 (P.T.A.B. June 30, 2016); *Symantec Corp. v. Trs. of Columbia Univ. in the City of New York*, IPR 2015-00377 (P.T.A.B. June 30, 2016). In 2018, in an assessment separate from its 2016 decision regarding this Court’s Claim Construction Orders, the Federal

Circuit affirmed the PTAB's decisions. *Trs. of Columbia Univ. in the City of New York v. Symantec Corp.*, 714 F. App'x 1021, 1022 (Fed. Cir. 2018).<sup>25</sup>

### **3. Post-Appeal Proceedings in this Court**

Upon return to this Court, Columbia filed a Motion for Partial Summary Judgment Regarding *Inter Partes* Review Estoppel, (ECF No. 198), and Norton filed a Motion to Permit Additional Claim Construction Proceedings (the "Markman Motion"), (ECF No. 204). The Court granted Columbia's Motion for Partial Summary Judgment, which precludes Norton from relying on prior art arguments that it did not raise during *inter partes* review before the PTAB. See *Trs. of Columbia Univ.*, 390 F. Supp. 3d at 679. The Court also granted Norton's Markman Motion, which allowed the Parties to conduct additional Markman briefing on the proper definition of "anomalous" and "model of function calls for the at least a [part/portion] of the program." See *Trs. of Columbia Univ. in the City of New York v. Symantec Corp.*, No. 3:13cv808, 2019 WL 2774321, at \*10 (E.D. Va. July 2, 2019).

While the Motion for Partial Summary Judgment and the Markman Motion were still pending, Norton filed the Motion for Judgment. (ECF No. 245.) Following an August 1, 2019 Court Conference, the Court lifted the stay imposed on the Parties' briefing on the Motion for Judgment. (Aug. 5, 2019 Order 1, ECF No. 263.) The Court denied the Motion for Judgment, concluding that Norton did not show by clear and convincing evidence that the remaining patent claims in the 115 Patent and the 322 Patent were invalid under 35 U.S.C. § 101.<sup>26</sup> See (Nov. 19, 2019 Mem. Op., ECF No. 288.)

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<sup>25</sup> The Federal Circuit addressed the PTAB's *inter partes* review decisions as to the 115 Patent and the 322 Patent in a single opinion. See *Trs. of Columbia Univ.*, 714 F. App'x at 1022.

<sup>26</sup> Section 101 states: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof,

Following the Court’s decision on the Motion for Judgment, the Parties filed Supplemental Claim Construction briefs addressing the correct construction of “model of function calls for the [part/portion] of the program”—the sole remaining term following the Court’s Markman Opinion.<sup>27</sup> (See ECF Nos. 292, 293.) The Parties then filed responses to the other’s Supplemental Claim Construction brief, (ECF Nos. 300, 301), and the Court held a December 18, 2019 Markman Hearing, (ECF No. 305). Following the Markman Hearing, the Court issued the Claim Construction Order defining the phrase “model of function calls for the at least a [part/portion] of the program” as not requiring a model created by modeling the program, but meaning “model of function calls created by modeling program executions.” (Dec. 20, 2019 Order, ECF No. 307.) Today, the Court issued a Memorandum Opinion striking Norton’s § 101 defense of invalidity.

What remains before the Court is Norton’s Partial Motion for Summary Judgment. Columbia has responded, and Norton has replied. The Court turns to the instant motion.

## **II. Standard of Review: Motion for Summary Judgment**

Summary judgment under Rule 56 is appropriate only when the Court, viewing the record as a whole and in the light most favorable to the nonmoving party, determines that there exists no genuine issue of material fact, and that the moving party is entitled to judgment as a matter of law. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 322–24 (1986); *Liberty Lobby*, 477 U.S. at 248–50.

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may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101.

<sup>27</sup> Although the Court originally allowed the Columbia and Norton to brief the proper construction of both “anomalous” and the phrase “model of function calls for the at least a [part/portion] of the program,” (see Markman Op. 19, ECF No. 253), the Parties later stipulated to Norton’s proposed definition of “anomalous,” i.e. “deviating from normal,” (see Pl. Resp. to Notice of Proposed Schedule 2, ECF No. 282; *see also* Nov. 8, 2019 Order 3, ECF No. 287).

“A fact is material if the existence or non-existence thereof could lead a jury to different resolutions of the case.” *Thomas v. FTS USA, LLC*, 193 F. Supp. 3d 623, 628 (E.D. Va. 2016) (citing *Liberty Lobby*, 477 U.S. at 248). Once a party has properly filed evidence supporting its motion for summary judgment, the nonmoving party may not rest upon mere allegations in the pleadings, but instead must set forth specific facts illustrating genuine issues for trial. *Celotex Corp.*, 477 U.S. at 322–24. The parties must present these in the form of exhibits and sworn affidavits. Fed. R. Civ. P. 56(c).

A court views the evidence and reasonable inferences drawn therefrom in the light most favorable to the nonmoving party. *Liberty Lobby*, 477 U.S. at 255. Whether an inference is reasonable must be considered in conjunction with competing inferences to the contrary. *Sylvia Dev. Corp. v. Calvert Cty.*, 48 F.3d 810, 818 (4th Cir. 1995). Nonetheless, the nonmoving “party is entitled ‘to have the credibility of his evidence as forecast assumed.’” *Miller v. Leathers*, 913 F.2d 1085, 1087 (4th Cir. 1990) (en banc) (quoting *Charbonnages de France v. Smith*, 597 F.2d 406, 414 (4th Cir. 1979)).

In the end, the non-moving party must do more than present a scintilla of evidence in its favor.

Rather, the non-moving party must present sufficient evidence such that reasonable jurors could find by a preponderance of the evidence for the non-movant, for an apparent dispute is not genuine within contemplation of the summary judgment rule unless the non-movant’s version is supported by sufficient evidence to permit a reasonable jury to find the facts in his favor.

*Sylvia Dev. Corp.*, 48 F.3d at 818 (internal quotations, citations, and alterations omitted). The ultimate inquiry in examining a motion for summary judgment is whether there is “sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party. If the

[nonmoving party's] evidence is merely colorable, or is not significantly probative, summary judgment may be granted." *Liberty Lobby*, 477 U.S. at 249–50 (internal citations omitted).

In the end, the question the Court must determine is "whether the evidence presents a sufficient disagreement to require submission to a jury or whether it is so one-sided that one party must prevail as a matter of law." *Id.* at 251–52.

### III. Analysis

The Court will first assess Norton's arguments about the State Law Claims, beginning with unjust enrichment and fraudulent concealment. As to these claims, Norton seeks "partial summary judgment based *only* on the issue of the NICECAP proposals' confidentiality and the NDA." (ECF No. 333 at 2 (emphasis in original).) The Court will then turn to Norton's arguments on Columbia's conversion claim. As to that claim, Norton argues—similar to those arguments made in the Motion to Dismiss—that federal patent law preempts the conversion claim. Finally, the Court will address Norton's arguments about the Federal Claims, namely the infringement claim as to the 115 and 322 Patents. As to these claims, Norton contends that amendment-based prosecution history estoppel results in Columbia being foreclosed from making certain arguments under the doctrine of equivalents.<sup>28</sup>

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<sup>28</sup> On December 10, 2021, the Court gave the parties notice that, under Federal Rule of Civil Procedure 56(f), it may find summary judgment in either party's favor on all issues of prosecution history estoppel Norton has raised in this litigation. (ECF No. 680.) In response to the Court's Order, Norton appears to have withdrawn its request for a bench trial on any prosecution history estoppel grounds that remain after this Opinion. (See ECF No. 682.) The Court will rule on prosecution history estoppel as to the live arguments from Norton's Motion for Partial Summary Judgment and conclude that it is no longer available as a trial defense in any form.

**A. The Court Will Grant the Partial Motion for Summary Judgment as to the Unjust Enrichment Claim, But Deny it as to the Fraudulent Concealment Claims to the Extent that These Claims are Based on the Confidentiality of the 2006 NICECAP Draft Proposals and the Requirements of the NDA**

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As to Columbia's state law unjust enrichment (Count Eight) and fraudulent concealment (Count Seven) claims, Norton argues that the potential confidentiality of the 2006 NICECAP Draft Proposals and the requirements of the NDA cannot support these causes of action. Norton maintains that, at the time it filed the 643 Patent, neither of the two 2006 NICECAP Draft Proposals constituted Confidential Information under the NDA. Norton looks to Columbia's prior patent filings and to the requirements of the NDA to support this argument. Because different legal standards apply to Columbia's unjust enrichment and fraudulent concealment claims, the Court will address each cause of action in turn.

**1. Federal Patent Law Preempts Columbia's Unjust Enrichment Claim to the Extent it is Based on the 2006 NICECAP Draft Proposals and the Requirements of the NDA**

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Federal patent law preempts Columbia's unjust enrichment claim to the extent it is based on the 2006 NICECAP Draft Proposals because Columbia has failed to show a confidential relationship existed between it and Norton as it pertains to these proposals. This is so because Columbia had introduced the 2006 NICECAP Draft Proposals into the public knowledge through filing the 191 Patent and related patent applications by the time Norton filed for what would become the 643 Patent.<sup>29</sup> The Court introduces the legal standards for unjust enrichment claims and federal preemption before analyzing the claims.

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<sup>29</sup> The Court recognizes that the Court's April 2, 2014 Opinion on Norton's Motion to Dismiss did not dismiss the Unjust Enrichment claim. That Opinion comports with the rationale here. In the April 2, 2014 Opinion, the Court correctly identified that the crux of an unjust enrichment claim turns on whether the parties had a confidential relationship, and found that "Columbia ha[d] alleged a confidential relationship with Symantec that prohibited Symantec from using confidential disclosure for its sole benefit." (ECF No. 67 at 19.) With the benefit of additional discovery, it is clear that Norton has overcome Columbia's initial allegation and

**a. Legal Standard: Unjust Enrichment Claims**

Under New York law,<sup>30</sup> “[u]njust enrichment is a quasi contract theory of recovery, and is an obligation imposed by equity to prevent injustice, in the absence of an actual agreement between the parties concerned.” *3839 Holdings LLC v. Farnsworth*, No. 654463/2016, 2017 WL 5649812, at \*9 (N.Y. Sup. Ct. Nov. 24, 2017) (citations omitted). “In order to plead a claim for unjust enrichment, the plaintiff must allege that the other party was enriched, at plaintiff’s expense, and that it is against equity and good conscience to permit the other party to retain what is sought to be recovered.” *Id.* (internal quotation marks and citations omitted); *see also Buttner v. RD Palmer Enters., Inc.*, No. 5:13-cv-0342, 2013 WL 6196560, at \*2 (N.D.N.Y. Nov. 27, 2013) (citing *Levine v. Landy*, 832 F. Supp. 2d 176, 188 (N.D.N.Y. 2011)).

Under Virginia law, “[t]he cause of action for unjust enrichment . . . applies as follows: (1) plaintiff conferred a benefit on defendant; (2) defendant knew of the benefit and should reasonably have expected to repay plaintiff; and (3) defendant accepted or retained the benefit without paying for its value.” *T. Musgrove Constr. Co., Inc. v. Young*, 298 Va. 480, 486 (Va. 2020) (quoting *Schmidt v. Household Fin. Corp., II*, 276 Va. 108, 116 (Va. 2008)). “The measure of recovery for unjust enrichment is limited to the benefit realized and retained by the defendant.” *Id.* (citing *Schmidt*, 276 Va. at 116).

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shown that a confidential relationship did not exist for the reasons articulated later in this Opinion.

<sup>30</sup> In the Motion to Dismiss, the Court stated that it could not determine whether Virginia or New York law applied to Columbia’s conversion claim and did not address which state’s law applied to Columbia’s unjust enrichment and fraudulent concealment causes of action. Norton—the moving party—contends that New York law must govern Columbia’s state law claims of unjust enrichment and fraudulent concealment. However, Columbia—who did not move for summary judgment—argues that New York law does not necessarily apply and that its claims survive under either New York or Virginia law. Because Columbia’s unjust enrichment claim fails and its fraudulent concealment claim survives under both New York and Virginia law, the Court need not decide which law to apply here.

**b. Legal Standard: Preemption By Federal Patent Law**

The Supremacy Clause of the United States Constitution ensures that a state law that conflicts with federal law is without effect. U.S. CONST. art. VI, cl. 2; *Hunter Douglas, Inc. v. Harmonic Design, Inc.*, 153 F.3d 1318, 1331 (Fed. Cir. 1998) (citation omitted), *overruled in part on other grounds by Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356 (Fed. Cir. 1999). “Federal Circuit law governs whether federal patent law preempts a state law claim.” *Tavory v. NTP, Inc.*, 297 F. App’x 976, 982 (Fed. Cir. 2008) (citing *Ultra-Precision Mfg., Ltd. v. Ford Motor Co.*, 411 F.3d 1369, 1376 (Fed. Cir. 2005)).

Federal law may preempt state law in one of three ways: (1) explicit preemption; (2) field preemption; and (3) conflict preemption. *Hunter Douglas*, 153 F.3d at 1332. Federal patent law “plainly does not provide for explicit preemption.” *Id.* (citing 35 U.S.C. §§ 1–376). As Judge Spencer correctly noted in this case’s Memorandum Opinion denying Norton’s Motion to Dismiss, “Congress does not intend to occupy exclusively the field of fraudulent concealment and unjust enrichment law . . . [and therefore] only conflict preemption might bar Columbia’s claims for fraudulent concealment and unjust enrichment.” (ECF No. 67 at 18 (citing *Univ. of Colo. Foundation, Inc. v. Am. Cyanamid Co. (Am. Cyanamid IV)*, 196 F.3d 1366, 1371 (Fed. Cir. 1999))).

Parties claiming patent infringement often bring unjust enrichment claims as well. Many courts, including the Federal Circuit, have addressed when federal patent law preempts a state law unjust enrichment claim. In the patent context, the Federal Circuit has recognized that “[a]n unjust enrichment claim is preempted by federal patent law when it conflicts with ‘the accomplishment and execution of the full purposes and objectives of Congress,’” such as when the unjust enrichment claims seeks a determination of true inventorship. *Tavory*, 297 F. App’x at

982 (quoting *Aronson*, 440 U.S. at 262). On the other hand, the Federal Circuit has concluded that federal patent law does not preempt a state law unjust enrichment claim where “whether a confidential relationship existed . . . was central to the unjust enrichment claim.” *Id.* at 983 (citing *Univ. of Colo. Found., Inc. v. Am. Cyanamid Co. (Am. Cyanamid VI)*, 342 F.3d 1298, 1306 (Fed. Cir. 2003)). Where a plaintiff’s claim does not involve a confidential relationship, federal patent law may preempt a state law unjust enrichment claim because the claim would seek correction of inventorship under federal patent law. *See id.* at 984 (concluding that the district court correctly held that federal patent law preempted plaintiff’s unjust enrichment claim where “the dispositive issue is [the plaintiff’s] alleged co-inventorship, which is governed exclusively by federal patent law” (citation omitted)).

**2. Analysis: Because the 898 Provisional Application Became Public When the PTO Issued the 191 Patent, No Confidential Relationship Exists Under the NDA Based on the 2006 NICECAP Draft Proposals**

As to Columbia’s unjust enrichment claim, Norton seeks summary judgment on a narrow issue—the confidentiality of the 2006 NICECAP Draft Proposals and the NDA. Because Columbia included the 2006 NICECAP Draft Proposals as a part of the 898 Provisional Application, those drafts no longer constituted Confidential Information under the NDA when the PTO issued the 191 Patent. Therefore, to the extent that Columbia relies on the 2006 NICECAP Proposals, Columbia cannot prove a confidential relationship, meaning that federal patent law preempts its unjust enrichment claim.

Because Norton seeks summary judgment solely on the confidentiality of the 2006 NICECAP Draft Proposals and the NDA, the Court will consider only whether a confidential relationship arises under these documents.<sup>31</sup>

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<sup>31</sup> Norton asserts that “Columbia’s [Unjust Enrichment and Fraudulent Concealment] claims fail for additional reasons, but Norton does not move for summary judgment on those

a. **Because the 191 Patent Encompassed the 2006 NICECAP Draft Proposals, the 2006 NICECAP Draft Proposals Did Not Constitute Confidential Information Under the NDA After the PTO Issued the 191 Patent**

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Norton asserts that neither of the two 2006 NICECAP Draft Proposals constituted Confidential Information under the NDA after Columbia disclosed them as a part of the 191 Patent, which the PTO published on September 24, 2009. To determine the confidentiality of the 2006 NICECAP Draft Proposals, the Court turns to the obligations expressed in the NDA and the timeline of events that led to the issuance of the 191 Patent and the 643 Patent.

The NDA, which Columbia and Norton signed on November 29, 2004, recognized that Columbia and Norton sought to “disclose and to receive the confidential information of the other Party.” (ECF No. 313-1 at 2.) The NDA defined Confidential Information as “information not generally known to the public, in written, oral, or in any other form.” (ECF No. 313-1 at 2.) It also stated that “Confidential Information shall not include that information that the Receiving Party can establish: (i) is, or has subsequently become, rightfully in the public domain without the Receiving Party’s breach of any obligation owed to the Disclosing Party . . .” (ECF No. 313-1 at 2.)

On May 31, 2006, before Norton, through Witten, submitted the 2006 NICECAP Final Proposal, Columbia filed the 898 Provisional Application. As a provisional patent application, the 898 Provisional Application did not publish publicly. *See* 35 U.S.C. § 122(b)(2)(A)(iii). The 898 Provisional Application included the 2006 NICECAP Draft Proposals. Columbia does not dispute this fact.

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grounds.” (ECF No. 314 at 7 n.1.) Norton does not address any additional grounds in support of the Partial Motion for Summary Judgment, the Court does not consider them here. Clearly no party can pursue a determination of true inventorship under a theory of unjust enrichment. *Tavory*, 297 F. App’x at 983.

On September 24, 2009, the PTO publicly issued the 191 Patent, which identified the 898 Provisional Application as “Related U.S. Application Data” and “incorporate[s] [it] by reference . . . in its entirety.” (ECF No. 313-10 at 2, 5.) Under Federal Circuit precedent, “[t]he incorporated patents are ‘effectively part of the host [patents] as if [they] were explicitly contained therein.’” *X2Y Attenuators, LLC v. Int'l Trade Comm'n*, 757 F.3d 1358, 1362–63 (Fed. Cir. 2014) (quoting *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1329 (Fed. Cir. 2001)). The Notice of Publication of Application that the PTO sent to Columbia recognized that the 191 Patent “may be accessed through the [PTO’s] publically [sic] available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov).” (ECF No. 313-11 at 2.)

Nearly one year later, on March 18, 2010, Norton drafted the Invention Disclosure Form that would eventually become the 643 Patent. On April 2, 2010, Norton filed the 609 Provisional Application. Similar to the 898 Provisional Application, the 609 Provisional Application did not publish. *See* 35 U.S.C. § 122(b)(2)(A)(iii). Yet another year later, on April 4, 2011, Norton filed the 013 Non-Provisional Application, which also did not publish. Finally, on October 1, 2013, the PTO issued the 643 Patent.

The undisputed progress of this timeline shows that Columbia’s 191 Patent became public information for the purposes of the NDA on September 24, 2009, before Norton filed the Invention Disclosure Form (on March 18, 2010), the 609 Provisional Application (on April 2, 2010), the 013 Non-Provisional Application (on April 4, 2011), and before the PTO issued the 643 Patent (on October 1, 2013). Indeed, on March 10, 2010, Dr. Stolfo recognized that the 191 Patent “ha[d] been made public.” (ECF No. 314-5 at 2.) Although the 191 Patent—the host Patent—did not specifically contain the 2006 NICECAP Draft Proposals, it did “incorporate[] by reference . . . in its entirety” the 898 Provisional Application, which included both 2006

NICECAP Draft Proposals. (ECF No. 313-10 at 5.) Because the 191 Patent incorporated by reference the 898 Provisional Application, the 191 Patent contained the “entire contents of” the 2006 NICECAP Draft Proposals as well. *See X2Y Attenuators, LLC*, 757 F.3d at 1363. Therefore, when the PTO issued the 191 Patent and it became publicly available on September 24, 2009, the 2006 NICECAP Draft Proposals could not be deemed Confidential Information under the NDA because they were “rightfully in the public domain without [Norton’s] breach of any obligation owed to [Columbia].” (See ECF No. 313-1 at 2.) The Court now turns to the effect of this conclusion.

**b. Federal Patent Law Preempts Columbia’s Unjust Enrichment Claim Based on the 2006 NICECAP Draft Proposals**

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Because federal patent law preempts state law unjust enrichment claims that are not based on a confidential relationship, to the extent Columbia’s unjust enrichment claim relies on the confidentiality of the 2006 NICECAP Draft Proposals, it must fail.

To avoid preemption of its state law unjust enrichment claim, Columbia must show that “a confidential relationship existed” and that this relationship was “central to the unjust enrichment claim.” *Tavory*, 297 F. App’x at 983 (citation omitted). Where an unjust enrichment claim does not include a confidential relationship, it essentially seeks a correction of inventorship. *See id.* at 983–84. Federal patent law governs who may be considered the inventor of a patent and preempts state law claims that seek such a conclusion. *See id.* at 984. Here, Columbia cannot show a confidential relationship under the NDA based on the 2006 NICECAP Draft Proposals because those proposals became “rightfully in the public domain” when the PTO issued the 191 Patent on September 24, 2009. (ECF No. 313-1 at 2); *see also X2Y Attenuators, LLC*, 757 F.3d at 1362–63. Because Columbia’s unjust enrichment claim—to the extent it is based on the confidentiality of the 2006 NICECAP Draft Proposals—does not include a

confidential relationship because the documents it covers had become public, federal patent law preempts it. *See Tavory*, 297 F. App'x at 983. Therefore, the Court will grant the Partial Motion for Summary Judgment as to the unjust enrichment claim in Count Eight to the extent it relies on the confidentiality of the 2006 NICECAP Draft Proposals and the NDA. Columbia fails to raise a dispute of material fact to preclude this result.

**c. Columbia Fails to Raise a Dispute of Material Fact to Preclude Summary Judgment as to Unjust Enrichment**

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In its Response to the Partial Motion for Summary Judgment, Columbia asserts that the Court cannot grant summary judgment on its unjust enrichment claim in Count Eight because Columbia disputes whether the 898 Provisional Application ever published. Columbia maintains that Norton “provides no evidence that the ‘898 [Provisional] Application was publicly available prior to April 2010, much less that anyone obtained the document from the public record.” (ECF No. 325 at 12.) Columbia states that the 898 Provisional Application “was never published.” (ECF No. 325 at 12 n.6.) However, because Columbia provides no evidence to support its contentions, it fails to raise a dispute of material fact to preclude summary judgment.

It is not enough for a party opposing a motion for summary judgment to say that disputes of material fact exist. “Rather, the non-moving party must present sufficient evidence such that reasonable jurors could find by a preponderance of the evidence for the non-movant.” *Sylvia Dev. Corp.*, 48 F.3d at 818 (internal quotations, citations, and alterations omitted); *see also* E.D. Va. Loc. Civ. R. 56(B); *Bouchat v. Balt. Ravens Football Club, Inc.*, 346 F.3d 514, 522 (4th Cir. 2003) (finding that “[a] party opposing a properly supported motion for summary judgment ‘may not rest upon the mere allegations or denials of [its] pleadings,’ but rather must ‘set forth specific facts showing there is a genuine issue for trial’” (quoting Fed. R. Civ. P. 56(e))).

Here, Columbia has presented no evidence to show that the 898 Provisional Application did not become publicly available when the PTO issued the 191 Patent. Rather, it asserts only that Norton has failed to present any evidence.

On the contrary, under applicable Federal Circuit precedent, the 898 Provisional Application became publicly available on September 24, 2009, when the host 191 Patent, which incorporated the 898 Provisional Application by reference, became publicly available. *See X2Y Attenuators, LLC*, 757 F.3d at 1362–63. Therefore, Columbia has failed to raise a dispute of material fact and the Court will grant the Partial Motion for Summary Judgment as to the unjust enrichment claim to the extent it relies on the confidentiality of the 2006 NICECAP Draft Proposals and the NDA.<sup>32</sup>

**3. Because Columbia Has Shown that Norton Had a Duty to Disclose That It Was Going to Seek Patent Protection for the Ideas in the 2006 NICECAP Draft Proposals, the Court Will Deny the Motion for Summary Judgment as to the Fraudulent Concealment Claim in Count Seven**

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Norton addressed its contention that Columbia’s fraudulent concealment claim must fail in the same section as its contention that federal patent law preempts Columbia’s unjust enrichment claim. Norton failed to recognize that different considerations govern the analysis of

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<sup>32</sup> Norton also seeks summary judgment on Columbia’s unjust enrichment claims saying that the NDA’s confidentiality obligations expired in 2009, two years before Norton filed the application for the 643 Patent. In response, Columbia argues that the NDA sets forth the confidentiality obligations of the signing parties in two paragraphs and that the five year limitation applied to only the first paragraph. Columbia contends that “section 2(b) separately and independently prohibits the receiving party from ‘us[ing] or exploit[ing]’ such disclosures ‘for their own benefit . . . without the prior written consent of the Disclosing Party’ *and is not limited in time.*” (ECF No. 325 at 13 (quoting ECF No. 313-1 at 3).) Columbia also identifies this as a dispute of fact.

Because the Court has concluded that the 2006 NICECAP Draft Proposals did not constitute Confidential Information under the NDA after the PTO issued the 191 Patent, the Court need not decide whether the five-year limitation applied to the confidentiality obligations in NDA § 2(b). Similarly, because this is a legal question, it is not a dispute of material fact that precludes summary judgment.

Columbia's fraudulent concealment claims.<sup>33</sup> Specifically, that Norton did not identify any duty it had to disclose information to Columbia, nor the degree of that duty, guides the Court's determination of whether to grant summary judgment as to Columbia's fraudulent concealment claim. Columbia, on the other hand, has identified this requirement and has shown that Norton had a duty to disclose information. Therefore, the Court will deny the Partial Motion for Summary Judgment as to the fraudulent concealment claim.

a. **Legal Standard: Fraudulent Concealment Claims**

Under New York law, “[t]he elements of a cause of action sounding in fraud are a material misrepresentation of an existing fact, made with knowledge of the falsity, an intent to induce reliance thereon, justifiable reliance upon the misrepresentation, and damages.” *Consol. Bus Transit, Inc. v. Treiber Grp., LLC*, 948 N.Y.S.2d 679, 681 (N.Y. App. Div. 2012) (citations omitted). “[T]o recover damages for fraudulent concealment requires, in addition to scienter, reliance, and damages, a showing that there was a fiduciary or confidential relationship between the parties which would impose a duty upon the defendant to disclose material information and that the defendant failed to do so.” *Id.* (citations omitted). New York law requires the plaintiff to show each element of fraud by “clear and convincing evidence.” *Banque Arabe et Internationale D'Investissement v. Maryland Nat'l Bank*, 57 F.3d 146, 153 (2d Cir. 1995) (citations omitted).

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<sup>33</sup> This Court's April 2, 2014 Opinion on Norton's Motion to Dismiss also dealt with the Unjust Enrichment and Fraudulent Concealment claims together. On the record developed at the Motion to Dismiss stage, “Columbia [had sufficiently] alleged a confidential relationship with Symantec” on the whole. (ECF No. 67 at 19.) As explained above, on this expanded record, the Court now recognizes that Norton could have a confidential relationship with Columbia that would require it to disclose its intention to seek patent protection of joint ideas, but that would not necessitate liability for Unjust Enrichment if the patented ideas had already become public information.

Pursuant to New York law, “an affirmative duty to disclose material information may arise from the need to complete or clarify one party’s partial or ambiguous statement,<sup>[34]</sup> or from a fiduciary duty<sup>[35]</sup> or confidential relationship between the parties.”<sup>[36]</sup> *Id.* at 155 (internal citations omitted). “Such a duty may also arise . . . where: (1) one party has superior knowledge of certain information; (2) that information is not readily available to the other party; and (3) the first party knows that the second party is acting on the basis of mistaken knowledge.” *Id.* (citations omitted); *see also Brass v. Am. Film Techs., Inc.*, 987 F.2d 142, 150 (2d. Cir. 1993) (identifying similar situations as those situations in which a duty to disclose arises).

Under Virginia law, “[i]n all cases of fraud the plaintiff must prove that it acted to its detriment in actual and justifiable reliance on the defendant’s misrepresentations (or on the assumption that the concealed fact does not exist).” *Bank of Montreal v. Signet Bank*, 193 F.3d 818, 827 (4th Cir. 1999) (citations omitted). “Concealment of a material fact by one who knows that the other party is acting upon the assumption that the fact does not exist constitutes actionable fraud.” *Id.* (quoting *Allen Realty Corp. v. Holbert*, 318 S.E.2d 592, 597 (1987)). “Silence does not constitute concealment in the absence of a duty to disclose.” *Id.* (citing *Norris*

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<sup>34</sup> Columbia does not allege that Norton made a “partial or ambiguous statement.” *Banque Arebe et Internationale D’Investissement*, 57 F.3d at 155.

<sup>35</sup> In accordance with New York law “reposing trust or confidence in a party that has superior access to confidential information is not sufficient to establish a fiduciary relationship . . . there is no fiduciary duty unless the trust or confidence has been *accepted* as well.” *Russell Publ’g Grp., Ltd. v. Brown Printing Co.*, No. 13 Civ. 5193, 2014 WL 1329144, at \*3 (S.D.N.Y. Apr. 3, 2014) (citations omitted).

<sup>36</sup> The Court has concluded that no confidential relationship existed between Columbia and Norton as to the 2006 NICECAP Draft Proposals under the NDA. Although Columbia briefs in detail why Norton had a fiduciary duty to Columbia based on the Parties’ discussions, because Norton did not *accept* any fiduciary relationship with Columbia, the Court cannot find a duty to disclose based on a fiduciary duty. *See Russell Publ’g Grp., Ltd.*, 2014 WL 1329144, at \*3.

*v. Mitchell*, 495 S.E.2d 809, 812–13 (1998); *Banque Arabe et Internationale D'Investissement*, 57 F.3d at 153 (applying New York law)).

Under Virginia law, a “duty to disclose does not normally arise when parties are engaged in an arm’s length transaction.” *Id.* at 829 (citations omitted). “A duty may arise (1) if the fact is material and the one concealing has superior knowledge and knows the other is acting upon the assumption that the fact does not exist, or (2) if one party takes actions which divert the other party from making prudent investigations (e.g., by making a partial disclosure).”<sup>37</sup> *Id.* (internal citations omitted). “Obviously, the concealment itself cannot constitute one of these diversionary actions.” *Id.* at 829 n.8.

To prove its fraudulent concealment claim under either Virginia or New York law Columbia would have to show, by clear and convincing evidence, that Norton had a duty to disclose the information that it allegedly concealed—here, the fact that Norton sought patent protection of ideas in the 2006 NICECAP Draft Proposals. *See id.* at 827 (Virginia law); *Consol. Bus Transit, Inc.*, 948 N.Y.S.2d at 681 (New York law). Importantly, both Virginia and New York law recognize a duty to disclose where one party holds superior information, the other party does not have ready access to the information, and the first party knows that the second party is acting on the basis of mistaken information. *See Bank of Montreal*, 193 F.3d at 829 (Virginia law);<sup>38</sup> *Banque Arabe et Internationale D'Investissement*, 57 F.3d at 155 (New York law).

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<sup>37</sup> Columbia does not allege that Norton took an action to divert Columbia from making prudent investigations. *See Bank of Montreal v. Signet Bank*, 193 F.3d at 829.

<sup>38</sup> Virginia law does not require that the superior information held by the first party not be readily accessible to the other party. *See Bank of Montreal*, 193 F.3d at 829. However, as will be shown, even if it did, Columbia has met that requirement.

**b. Columbia Has Shown that Norton Had a Duty to Disclose Information, Therefore the Court Will Deny Summary Judgment on Columbia's Fraudulent Concealment Claim in Count Seven**

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As with the unjust enrichment claim, Norton seeks summary judgment on Columbia's fraudulent concealment claims on a narrow issue—the confidentiality of the 2006 NICECAP Draft Proposals and the NDA. Because Norton seeks summary judgment on a narrow issue, the Court will consider only whether Norton had a duty to disclose that it sought patent protection for the ideas expressed in the 2006 NICECAP Draft Proposals.

Here, Columbia has shown that Norton had a duty to disclose that it sought patent protection for the information in the 2006 NICECAP Draft Proposals based on Norton's superior information and knowledge that Columbia acted on the mistaken belief that Norton would name Dr. Stolfo and Dr. Keromytis as inventors on the patent. Because both New York and Virginia law require a duty to disclose to establish fraudulent concealment, and both recognize a duty to disclose when a party has superior information and knows that the other party acts on the basis of mistaken information, Columbia's fraudulent concealment claim survives under both New York and Virginia law. *See Bank of Montreal*, 193 F.3d at 827 (Virginia law); *Banque Arebe et Internationale D'Investissement*, 57 F.3d at 155 (New York law recognizing a duty to disclose when a party has superior information); *Consol. Bus Transit*, 948 N.Y.S.2d at 681 (New York elements).

The 643 Patent arises out of the ideas expressed in the 2010 DARPA Proposal. The 2006 NICECAP Proposal helped to form part of the basis of the 2010 DARPA Proposal. After Shou prepared the Invention Disclosure Form based on the 2010 DARPA Proposal, Larson—a Norton lawyer—emailed Dr. Stolfo and Dr. Keromytis to inform them that Norton planned to seek patent protection for the ideas in the Invention Disclosure Form and to ask whether Dr. Stolfo or

Dr. Keromytis considered themselves to be inventors. [REDACTED]

[REDACTED] When Larson emailed Dr.

Stolfo and Dr. Keromytis several days later he failed to mention that Norton had already filed the 609 Provisional Application and that it did not list either Dr. Stolfo or Dr. Keromytis as an inventor.

To determine whether Columbia's fraudulent concealment claim survives the Partial Motion for Summary Judgement, the Court must use a three part test to decide whether Columbia has shown that Norton had a duty to disclose that it sought patent protection of the ideas expressed in the 2006 NICECAP Proposals. *See Bank of Montreal*, 193 F.3d at 827; *Banque Arebe et Internationale D'Investissement*, 57 F.3d at 155.

The first prong asks whether Norton had "superior knowledge of certain information." *Banque Arebe et Internationale D'Investissement*, 57 F.3d at 155.<sup>39</sup> The undisputed record shows that Norton had superior information that it sought patent protection of the 2010 DARPA Proposal, which was based on the 2006 NICECAP Proposal. Shou prepared the Invention Disclosure Form and Larson and Kimes, two of Norton's lawyers, worked to file the 609 Provisional Application and the 013 Non-Provisional Application that would become the 643 Patent. Therefore, Norton had superior knowledge and Columbia satisfies the first prong.

As to the second prong, the "information is not readily available to the other party," *Banque Arebe et Internationale D'Investissement*, 57 F.3d at 155, this information was not

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<sup>39</sup> Because New York law contains an additional requirement—that the superior information held by the first party not be readily accessible to the second party—the Court will cite *Banque Arebe et Internationale D'Investissement*, 57 F.3d at 155, throughout its discussion as to whether Columbia has shown a duty to disclose. Because Virginia law recognizes a duty to disclose under the same circumstance, the same outcome would result under Virginia law. *See Bank of Montreal*, 193 F.3d at 827.

readily accessible to Columbia. As a provisional patent application, the 609 Provisional Application did not publish. *See* 35 U.S.C. § 122(b)(2)(A)(iii). The 013 Non-Provisional Application, which, as a non-provisional application ordinarily would have published, did not because Norton *asked* the PTO *not* to publish it. *See* 35 U.S.C. § 122(b)(2)(B)(i). No one at Norton notified Columbia that Norton did not list Dr. Stolfo and Dr. Keromytis as named inventors on either the 609 Provisional Application or the 013 Non-Provisional Application. Clearly, the fact that Norton sought patent protection for the ideas in the 2006 NICECAP Proposals without listing Dr. Stolfo and Dr. Keromytis as inventors was not readily available to Columbia, meaning that Columbia satisfies the second prong.

Finally, the Court turns to the third prong, that “the first party knows that the second party is acting on the basis of mistaken knowledge.” *Banque Arebe et Internationale D’Investissement*, 57 F.3d at 155. Here, viewing the evidence in the light most favorable to Columbia as the non-moving party, *see Liberty Lobby*, 477 U.S. at 255, Norton knew that Columbia continued its relationship with Norton on the basis of the mistaken knowledge that Norton would include Dr. Stolfo and Dr. Keromytis as inventors on the 643 Patent. The record is replete with examples of Norton employees informing Dr. Stolfo and Dr. Keromytis that Norton planned to seek patent protection and inquiring whether Dr. Stolfo or Dr. Keromytis considered themselves to be inventors. Therefore, the third prong of this analysis is amply satisfied.

On March 24, 2010, three Norton employees asked the Columbia professors whether they considered themselves to be co-inventors. However, the professors did not know on March 24, 2010 that Norton had filed—two weeks earlier—an Invention Disclosure Form identifying only Shou as the inventor.

Larson, the “non-evil” Norton lawyer, was told on March 24 that the professors considered themselves co-inventors. That same day, Dacier told Drs. Stolfo and Keromytis that he told Norton to [REDACTED] so that the Norton-Columbia collaboration did not start off “on the wrong foot.” (ECF No. 320-14 at 9.)

And twice on March 24, 2010, Professors Stolfo and Keromytis were told affirmatively misleading information. Larson told the professors that Shou “was *considering*” patenting what would become the 643 Patent even though Shou had already (non-publicly) filed the Invention Disclosure Form two weeks earlier and had listed only Shou as the inventor. (ECF No. 320-14 at 2.)

Worse, also on March 24, Shou told Professors Stolfo and Keromytis that he had added their names alongside Dacier and himself to the list of co-inventors. This was not done. The Invention Disclosure Form filed non-publicly two weeks earlier included only Shou’s name. And strikingly, only Shou and Dacier were listed on the non-public Provisional Patent Application filed nine days after Shou told the professors otherwise. Indeed, eleven days after Shou assured the professors that they had been listed as co-inventors, the April 4 Non-Provisional Patent Application identified only Shou as the inventor.

No one at Norton told Professors Stolfo and Keromytis in 2010 or afterward that their names were omitted as co-inventors or inventors. In 2011, when a fourth attorney, Benjamin Kimes, contacted the professors asking about their role in inventorship, [REDACTED]

[REDACTED]

[REDACTED] Kimes never responded to Dr. Stolfo, Dr. Keromytis, or anyone at Columbia.

Viewing the evidence in the light most favorable to the non-moving party, Columbia, *see Liberty Lobby*, 477 U.S. at 255, it appears that Columbia continued to work with Norton after

receiving these emails. Therefore, Norton knew that Columbia acted on the basis of mistaken knowledge and Columbia satisfies the third prong.

As the Court correctly concluded in its April 2, 2014 opinion, based on the *American Cyanamid* cases, “any remedy redressing Symantec’s alleged fraudulent concealment or disgorging Symantec of benefits it obtained wrongfully [unjust enrichment] would not be akin to granting an exclusive property right, but rather would make Columbia whole for its tortious injury.” (ECF No. 67 at 20); *Am. Cyanamid IV*, 196 F.3d at 1371; *Am. Cyanamid VI*, 342 F.3d at 1305.

Because Columbia has met all three prongs to show that Norton had a duty to disclose that it sought patent protection for the ideas expressed in the 2006 NICECAP Draft Proposals without identifying Dr. Stolfo and Dr. Keromytis as inventors, the Court will deny the Partial Motion for Summary Judgment on the fraudulent concealment claim in Count Seven.

**B. Federal Patent Law Preempts Columbia’s Conversion Claim**

The Court turns to Columbia’s remaining State Law Claim, the conversion claim. Norton asserts that federal patent law also preempts Columbia’s conversion claim because it seeks a correction of inventorship.

The Court first reviews the legal standards necessary to decide Norton’s challenge to this claim, including the standard for conversion claims and when federal patent law preempts state law conversion claims. After reviewing the facts of this matter through the lens of the proper legal standards, the Court concludes that federal patent law preempts Columbia’s conversion claim because this claim seeks a patent remedy—correction of inventorship.<sup>40</sup>

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<sup>40</sup> Although the Court’s April 2, 2014 Opinion did not dismiss the Conversion claim, this finding comports with that opinion. In the April 2, 2014 Opinion, the Court concluded that federal patent law did not preempt Columbia’s state law conversion claim when considered under either New York or Virginia law. Specifically, the Court stated that “to the extent that

1. Applicable Legal Standards

a. Legal Standard: Conversion Claims, Generally

Under New York law,<sup>41</sup> conversion requires: “(1) legal ownership or an immediate superior right of possession to a specific identifiable thing; (2) over which a defendant has exercised an unauthorized dominion; (3) to the exclusion of plaintiff’s rights.” *Buttner*, 2013 WL 6196560, at \*2 (citing *Berman v. Sugo LLC*, 580 F. Supp. 2d 191, 206 (S.D.N.Y. 2008)). “Recovery under New York State conversion law is limited to the value of the property at the time and place of seizure plus interest.” *E. Coast Novelty Co., v. City of N.Y.*, 842 F. Supp. 117, 124 (S.D.N.Y. 1994). Generally, “profits lost are . . . disallowed . . . though they may be recoverable if they may reasonably be expected to follow from the conversion.” *Id.* (quoting *Fantis Foods, Inc. v. Standard Importing Co.*, 402 N.E.2d 122, 125 (N.Y. 1980)). “Lost profits are generally disallowed because the fixed legal interest rate replaces the uncertain and indefinite profits that a plaintiff might have made either from the possession of the goods or their equivalent in money.” *Id.* (citations omitted).

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Columbia asserts a claim for conversion that is not ‘dependent on a determination of patent inventorship or ownership,’ it has asserted a claim for conversion that is not preempted by the federal patent laws.”” (ECF No. 67 at 22 (quoting *Gerawan Farming*, 2012 WL 691758, at \*7).)

After discovery, the only measure of damages identified by Columbia that it may pursue—the lost value of the 643 Patent—shows that Columbia’s conversion claim is premised on the contention that Dr. Stolfo and Dr. Keromytis are the true inventors of the technology in the 643 Patent. This is a correction of inventorship claim. Because Columbia has not shown that it brings its conversion claim on any ground other than correction of inventorship, federal patent law preempts this state law claim.

<sup>41</sup> As with Norton’s challenge to the fraudulent concealment and unjust enrichment claims, the Parties disagree as to whether the Court should utilize New York or Virginia law when deciding Norton’s challenge to Columbia’s conversion claim. Because Columbia’s conversion claim fails under both New York and Virginia law, the Court need not decide which law to apply here.

Similarly, under Virginia law, “conversion requires proof of a ‘wrongful exercise or assumption of authority . . . over another’s goods, depriving him of their possession.’” *Condo. Servs., Inc. v. First Owners’ Ass’n of Forty Six Hundred Condo., Inc.*, 709 S.E.2d 163, 171 (Va. 2011) (quoting *Universal C.I.T. Credit Corp. v. Kaplan*, 92 S.E.2d 359, 365 (1956)). “Any distinct act of dominion wrongfully exerted over the property of another, and in denial of his rights, or inconsistent therewith, may be treated as a conversion.” *Id.* (quoting *Universal C.I.T. Credit Corp.*, 92 S.E.2d at 365); *see also Desalle v. TitleMax of Va., Inc.*, No. 3:14cv834, 2014 WL 12771139, at \*2 n.3 (E.D. Va. Dec. 23, 2014) (stating same). “The measure of damages in a conversion action [under Virginia law] is the market value of the property at the time of conversion.” *Desalle*, 2014 WL 12771139, at \*2 (citing *E.I. du Pont de Nemours & Co. v. Kolon Indus., Inc.*, No. 3:09cv58, 2011 WL 4625760, at \*2 (E.D. Va. Oct. 3, 2011)).

**b. Legal Standard: Preemption By Federal Patent Law**

As explained above, federal law may preempt state law by explicit preemption, field preemption, and conflict preemption, but federal patent law “plainly does not provide for explicit preemption.” *Hunter Douglas*, 153 F.3d at 1332 (citing 35 U.S.C. §§ 1–376). Therefore, the Court considers whether field preemption or conflict preemption applies to conversion claims.

Conflict preemption arises “when it is impossible for a private party to comply with both state and federal requirements . . . or when the state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.” *Id.* (internal quotation marks and citations omitted). “Under field preemption, state law is preempted when it regulates conduct in a field that Congress intends the federal government to occupy exclusively.” *Id.* This intent can arise in at least two ways: (1) “a scheme of federal regulation . . . so pervasive as to make reasonable the inference that Congress left no room for the States to

supplement it;” or, (2) “when congressional legislation touches a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject.” *Id.* (internal quotation marks and citations omitted). The Federal Circuit has recognized that “field preemption is a species of conflict preemption” because a state law that falls within a preempted field conflicts with Congressional intent. *Id.* (citation omitted).

When determining whether federal patent law preempts a state-law claim through either field or conflict preemption, the Court must consider the “objectives of the federal patent laws.” *Id.* at 1333 (citations omitted). The Federal Circuit has recognized three objectives that a Court must weigh: (1) “patent law seeks to foster and reward invention;” (2) “it promotes disclosure of inventions to stimulate further innovation and to permit the public to practice the invention once the patent expires;” and, (3) “the stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public.” *Id.* (quoting *Aronson*, 440 U.S. at 262). “These objectives are in some ‘tension’ with one another, and Congress struck a ‘balance’ between them through federal patent law.” *Id.* (quoting *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 152 (1989)).

As to the conversion claim here, the Federal Circuit has “held that ‘the field of federal patent law preempts any state law that purports to define rights based on inventorship.’” *Hif Bio, Inc. v. Yung Shin Pharms. Indus., Co.*, 600 F.3d 1347, 1353 (Fed. Cir. 2010) (quoting *Am. Cyanamid IV*, 196 F.3d 1366, 1372 (Fed. Cir. 1999)). This is so because “[a] different state inventorship standard might grant property rights to an individual who would not qualify as an inventor under federal patent law, or might grant greater relief to inventors than is afforded by federal patent law.” *Id.* (citation omitted). However, “the appearance of ‘an alternative, non-patent theory’ which may entitle the plaintiffs to their requested relief compels the conclusion

that the cause of action does not arise under the patent laws.” *Id.* at 1354 (quoting *Christianson v. Colt Indus. Operating Corp.*, 486 U.S. 800, 813 (1988) and citing *Am. Tel. & Tel. Co. v. Integrated Network Corp.*, 972 F.2d 1321, 1324 (Fed. Cir. 1992)). In such a case, federal patent law does not preempt the cause of action and the plaintiff may proceed on its state law claim.

“[C]ourts have differentiated between [conversion] claims that are dependent on a determination of patent inventorship or ownership and those that are based on a non-patent theory of conversion.” *Gerawan Farming*, 2012 WL 691758, at \*7. “Claims that are dependent on a determination of patent inventorship or ownership, such as a misappropriation of patent rights, are generally preempted by federal patent law.” *Id.* However, “claims that can be established without reference to patent inventorship or ownership are generally not preempted by federal patent law.” *Id.*

**2. Because Columbia’s Conversion Claim Seeks Damages Arising from Correction of Inventorship, Federal Patent Law Preempts Columbia’s Conversion Claim in Count Nine**

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Because the damages Columbia seeks stem from a correction of ownership and federal patent law governs this remedy, federal patent law preempts Columbia’s state law conversion claim.

Federal patent law preempts state law conversion claims where the conversion claim seeks a correction of inventorship or depends upon a patent theory for recovery. *See, e.g., Speedfit LLC v. Woodway USA, Inc.*, 226 F. Supp. 3d 149, 160 (E.D.N.Y. 2016); *Brown v. Brown*, No. CV 13-03318, 2013 WL 5947032, at \*7 (N.D. Cal. Nov. 5, 2013); *Gerawan Farming*, 2012 WL 691758, at \*7; *Auburn Univ. v. Int’l Bus. Machs. Corp.*, No. 3:09cv694, 2009 WL 3757049, at \*3 (M.D. Ala. Nov. 9, 2009). *C.f. Tavory*, 297 F. App’x at 983

(concluding that federal patent law preempted plaintiff's state law unjust enrichment claim where plaintiff had not alleged a confidential relationship and sought correction of inventorship).

In this case, the damages Columbia seek plainly show that Columbia's conversion claim relies on correction of inventorship.<sup>42</sup> In the Amended Complaint, Columbia seeks "damages adequate to compensate Columbia for [Norton's] conversion . . . along with punitive damages for willful and wanton misconduct" in addition to "a determination that [Norton] has converted

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<sup>42</sup> Norton also seeks summary judgment on Columbia's conversion claim based on the allegations in the Amended Complaint and Columbia's prior arguments in response to the Motion to Dismiss. Norton believes that looking to these two documents shows that Columbia's conversion claim "is based solely on Norton allegedly converting the 2006 NICECAP drafts and proposal and the 2010 DARPA proposal by obtaining the '643 patent without listing Professors Stolfo and Keromytis as inventors." (ECF No. 314 at 18.) But Norton omits key portions of Columbia's allegations. For instance, Columbia states in the Amended Complaint that Norton

used Columbia's materials and technology, and the disclosures merged therein, relating to Columbia's decoy technology reflected in, *among other things*, the 2006 drafts of the NICECAP grant proposal, for unauthorized purposes without Columbia's knowledge or permission by, *among other things*, filing and prosecuting a utility patent application on that technology which matured into the '643 patent. In so doing, [Norton] applied Columbia's property to its own use, excluded Columbia from the use of that property, and obtained the incremental benefit unavailable to the public of securing a patent on decoy technology developed by Columbia and disclosed to [Norton] in confidence, and of gaining a head start in the development of products and services incorporating, based on, or derived from Columbia's decoy technology.

(ECF No. 12 ¶ 141 (emphasis added).)

This shows that although Columbia relied in part on the 2006 NICECAP Draft Proposals and the filing of the 643 Patent, it also considered *other* actions by Norton when bringing its conversion claim. For instance, Columbia specifies that [REDACTED]

[REDACTED] Columbia also points to a deposition in which one of Norton's proposed experts opines that Norton highlighted the decoy technology when marketing its products. Therefore, not only has Columbia pled facts other than the 2006 NICECAP Draft Proposals and the filing of the 643 Patent in the Amended Complaint, it has also likely presented sufficient information in the record at summary judgment to preclude summary judgment on this issue.

However, because the Court concludes the only measure of damages that Columbia may pursue shows that a correction of inventorship undergirds its conversion claim, federal patent law preempts this state law claim.

Columbia's property." (ECF No. 12 at 44–45.) In response to the Partial Motion for Summary Judgment, Columbia clarifies that

Norton's misconduct collateral to seeking the '643 Patent: (i) caused Columbia not to protect its own interests (through, *e.g.*, a demand for compensation before filing the application; *ex ante* legal action to prevent misuse); (ii) caused Columbia to forego seeking other lucrative business relationships and instead continue to work with Norton; and (iii) caused damage to one of Columbia's existing licensees.

(ECF No. 325 at 22–23.) However, even if these damages identified in response to the Partial Motion for Summary Judgment were included in those damages that Columbia identified in the Amended Complaint,<sup>43</sup> Columbia cannot recover them for its conversion claim under either New York or Virginia law. Under New York law, the recovery for a conversion claim "is limited to the value of the property at the time and place of seizure plus interest." *E. Coast Novelty Co.*, 842 F. Supp. at 124. Similarly, under Virginia law, the "measure of damages in a conversion action is the market value of the property at the time of conversion." *Desalle*, 2014 WL 12771139, at \*2. Therefore, neither New York nor Virginia law would allow Columbia to recover damages for the items Columbia identified in its response to the Partial Motion for Summary Judgment.

Further, Columbia's proposed damages expert, Dr. Ryan Sullivan, [REDACTED]

[REDACTED] (ECF

No. 314-8 at 5.) He states that [REDACTED]

[REDACTED] (ECF No. 314-8 at 5.) Dr. Sullivan concludes that [REDACTED]

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<sup>43</sup> Norton states that Columbia cannot recover for these damages because Columbia does not identify them in the Amended Complaint. (Reply Partial Mot. Summ. J. 14, ECF No. 333.) But even if these damages were included in Columbia's general request for damages, they would still falter because they are not available as a measure of damages for a conversion claim under either New York or Virginia law.

[REDACTED] (ECF No. 314-8 at 5.)

Dr. Sullivan [REDACTED] Columbia

would only be entitled to these damages—which arise out of the 643 Patent—if the jury determined that Norton should have listed Dr. Stolfo and Dr. Keromytis as inventors of the 643 Patent.

Because the only type of damages available to Columbia for its conversion claim demonstrate that Columbia’s conversion claim seeks a correction of inventorship, federal patent law preempts this claim. *See e.g., Speedfit LLC*, 226 F. Supp. 3d at 160 (concluding that federal patent law preempted the plaintiff’s state law conversion claim because it sought a correction of inventorship); *Brown*, 2013 WL 5947032, at \*7 (same); *Gerawan Farming*, 2012 WL 691758, at \*7 (same); *Auburn Univ.*, 2009 WL 3757049, at \*3–4 (same). Columbia may pursue this relief through its federal correction of inventorship claim in Count Ten, or correction of inventorship/joint inventorship claim in Count Eleven.

The Court will grant the Partial Motion for Summary Judgment as to Columbia’s conversion claim in Count Nine because federal patent law preempts this claim.<sup>44</sup>

**C. Prosecution History Estoppel Does Not Bar Columbia’s Arguments Under the Doctrine of Equivalents**

Having decided Norton’s challenges to Columbia’s State Law Claims, the Court turns to Norton’s arguments that Columbia is estopped from asserting the doctrine of equivalents because of the prosecution history of the 115 and 322 Patents.

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<sup>44</sup> Norton also seeks summary judgment on Columbia’s conversion claim “if the Court holds that any of the 2006 NICECAP drafts or proposals were not confidential when Norton filed the applications that matured into the ‘643 patent.’” (ECF No. 314 at 21.) Norton states that, in that situation, “the Court should grant partial summary judgment to Norton because any state law conversion claim based on the use of non-confidential material to obtain a patent is preempted.” (ECF No. 314 at 21.) Because the Court has concluded that federal patent law preempts Columbia’s conversion claim in total, the Court need not reach this argument.

Prosecution history estoppel has been raised in at least three contexts during this litigation. First, Norton moves for Summary Judgment on three amendment-based prosecution history estoppel arguments in this Motion for Partial Summary Judgment.<sup>45</sup> Second, during the meet and confer process, as reflected in the parties' Proposed Joint Pretrial Order, (see ECF No. 555), Norton indicated its intention to request a bench trial on any prosecution history estoppel arguments not resolved by this Court's decision on its Motion for Partial Summary Judgment, and clarified its additional argument-based estoppel defense. Columbia then sought leave to file a cross-motion to Norton's Motion for Partial Summary Judgment on all four grounds of prosecution history estoppel. (See ECF No. 630.)

On December 10, 2021, the Court issued an order giving notice to the parties that, under Federal Rule of Civil Procedure 56(f), it may grant summary judgment to either party on the issue of prosecution history estoppel. (ECF No. 680.) Federal Rule of Civil Procedure 56(f) allows a court, “[a]fter giving notice and a reasonable time to respond,” to: “(1) grant summary judgment for a nonmovant; (2) grant [summary judgment] on grounds not raised by a party; or (3) consider summary judgment on its own after identifying for the parties material facts that may not be genuinely in dispute.” Fed. R. Civ. P. 56(f). The Court stated that it “may grant summary judgment on any of the four bases for prosecution history estoppel that Norton has

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<sup>45</sup> While Norton's “‘Combined Model’ and ‘Randomization’ Limitations Of The ‘115 Patent” section in the Motion for Partial Summary Judgment, (ECF No. 314 at 29–30), appears to incorporate the argument-based estoppel contention Norton would later clarify, (see Mem. Supp. Partial Mot. Summ. J. 29, ECF No. 314 (“This result was based on patentability arguments over prior art made by Columbia. Ex. 22 . . . (recounting Columbia arguments regarding the ‘randomization’ claims.”)), because Norton explicitly stated in its Reply that “amendment-based estoppel [is] at issue here,” (ECF No. 333 at 19), the Court construes this section of Norton's Motion as moving for summary judgment only on the amendment-based *inter partes* review estoppel allegation.

asserted—Norton’s three amendment-based estoppel claims, or Norton’s argument-based estoppel claim,” and gave the parties seven days to file supplemental briefing. (ECF No. 680.)

On December 17, 2021, Columbia stated on the record that it “will not file any additional responses on the issue of Prosecution History Estoppel, and rests on its previous submissions identified by the Court.” (Plaintiff’s Response to Court’s December 10, 2021 Order Regarding Prosecution History Estoppel, ECF No. 681.) Norton likewise declined to brief the issue further, and “withdr[ew] its request (as set forth in the parties’ submitted Proposed Joint Pretrial Order (ECF No. 555)) for a bench trial on prosecution history estoppel issues.” (NortonLifeLock Inc.’s Response to Order of December 10, 2021 Regarding the Issue of Prosecution History Estoppel, ECF No. 682.) Because Norton raised its argument-based estoppel defense only in the context of a bench trial, (*see supra* note 45), the Court construes Norton’s response as consenting to have its three amendment-based estoppel arguments decided on summary judgment for either party in this Opinion without further briefing, and waiving its argument-based estoppel defense.<sup>46</sup>

The Court has received and considered all of the parties’ briefing on prosecution history estoppel: the parties’ briefing on Norton’s Motion for Partial Summary Judgment, (ECF Nos. 314, 325, and 333), the parties’ substantive supplemental briefing on Columbia’s Motion for Leave to File a Cross-Motion for Partial Summary Judgment Regarding Prosecution History Estoppel, (ECF Nos. 629-1, 673, and 678),<sup>47</sup> and the parties’ Proposed Joint Pretrial Order, (ECF

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<sup>46</sup> The Court will explain that argument-based prosecution history estoppel would falter in any event.

<sup>47</sup> On August 28, 2020, Columbia filed its Motion for Leave to File a Cross-Motion for Partial Summary Judgment Regarding Prosecution History Estoppel. (ECF No. 630.) The initial briefing focused on procedural concerns regarding whether Columbia’s motion was timely. (*See* ECF Nos. 631, 638, and 640.) On September 29, 2021, the Court ordered the parties to submit supplemental briefing on the substantive issues regarding prosecution history estoppel, (*see* ECF No. 663), and advised the parties in its December 10, 2021 Order that it would take that briefing

No. 555). First, the Court will discuss the doctrine of equivalents—one of two ways that Columbia may prove its infringement claim. Second, the Court will evaluate prosecution history estoppel, which serves as a limitation on the doctrine of equivalents.

The Court will explain its conclusion that, even if a presumption of prosecution history applied here, Columbia has rebutted that presumption. Because the Court gave the parties notice of its intention to grant summary judgment on prosecution history estoppel in favor of either party under Federal Rule of Civil Procedure 56(f), and because prosecution history estoppel is a question of law and no material facts are in dispute, the Court will deny Norton's Partial Motion for Summary Judgment as to the Federal claims and grant summary judgment in Columbia's favor as to all prosecution history estoppel arguments Norton has raised.

**1. Applicable Legal Standards**

**a. Legal Standard: Doctrine of Equivalents**

To determine whether a defendant has infringed on a plaintiff's patent, the Court must undertake two steps. First, the Court must engage in claim construction “to determine the scope and meaning of the asserted claims.”<sup>48</sup> *Biagro W. Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1301 (Fed. Cir. 2005) (citation omitted). Second, the Court compares the “properly construed claims with the allegedly infringing product to determine whether the product embodies every limitation of the claim.” *Id.* (citation omitted). A plaintiff asserting patent infringement may

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into consideration in determining whether either party was entitled to summary judgment on prosecution history estoppel, (see ECF No. 680).

<sup>48</sup> Many terms of the 115 and 322 Patent have been construed. (See Claim Construction Order 1–2, ECF No. 123; Clarified Claim Construction Order 2, ECF No. 146; Dec. 20, 2019 Claim Construction Order, ECF No. 307.) Most recently, the Court construed the phrase “a model of function calls for the at least a [part/portion] of the program” found in the remaining patent claims of the 115 and 322 Patents. (See Dec. 20, 2019 Claim Construction Order, ECF No. 307.)

proceed under a theory of literal infringement<sup>49</sup> or under the doctrine of equivalents. *See Deering Precision Instruments, LLC v. Vector Distrib. Sys., Inc.*, 347 F.3d 1314, 1324 (Fed. Cir. 2003) (citation omitted) (analyzing infringement under literal infringement and then the doctrine of equivalents).

The doctrine of equivalents ensures that “a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is ‘equivalence’ between the elements of the accused products or process and the claimed elements of the patented invention.” *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997) (quoting *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609 (1950)). “Few propositions of patent law have been so consistently sustained by the Supreme Court as the doctrine of equivalents.” *Eli Lilly & Co. v. Hospira, Inc.*, 933 F.3d 1320, 1329 (Fed. Cir. 2019) (citing cases).

Although infringement under literal infringement or the doctrine of equivalents is a question of fact, *see Biagro W. Sales, Inc.*, 423 F.3d at 1301, summary judgment is proper “[w]here the evidence is such that no reasonable jury could determine two elements to be equivalent,” *Warner-Jenkinson Co., Inc.*, 520 U.S. at 39 n.8 (citing Fed. R. Civ. P. 56; *Celotex Corp.*, 477 U.S. at 322–23).

The Supreme Court has cautioned that “the doctrine of equivalents, ‘when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement’ . . . and that, without the proper balance between these two imperatives, the doctrine may ‘take[] on a life of its own, unbonded by the patent claims.’” *Eli Lilly*, 933 F.3d at

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<sup>49</sup> Norton does not seek summary judgment on Columbia’s literal infringement claims. It seeks partial summary judgment only on Columbia’s claims of infringement based on the doctrine of equivalents. Only the doctrine of equivalents is addressed here.

1330 (second alteration in original) (quoting *Warner-Jenkinson Co., Inc.*, 520 U.S. at 28–29). Prosecution history estoppel acts as an “important limitation[] on a patentee’s ability to assert infringement under the doctrine of equivalents.” *Id.* (citing *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 737–41 (2002) (“*Festo VII*”)). Whether prosecution history applies and the scope of the estoppel are questions of law. *See Biagro W. Sales, Inc.*, 423 F.3d at 1301–02 (citation omitted)

**b. Legal Standard: Prosecution History Estoppel**

“Prosecution history estoppel arises when a patent applicant narrows the scope of his claims during prosecution for a reason ‘substantial[ly] relating to patentability.’” *Eli Lilly*, 933 F.3d at 1330 (citing *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1366–67 (Fed. Cir. 2003) (“*Festo X*”)). Two types of prosecution history estoppel exist: (1) amendment-based estoppel and (2) argument-based estoppel. *Deering Precision Instruments, LLC*, 347 F.3d at 1324–25.

Norton has raised three amendment-based estoppel arguments and one argument-based estoppel argument throughout this litigation. (*See* Mem. Supp. Partial Mot. Summ. J. 21–30, ECF No. 314 (moving for summary judgment on three amendment-based estoppel theories); Proposed Joint Pretrial Order 69–71, ECF No. 555 (stating Norton’s intention to raise argument-based estoppel in addition to amendment-based estoppel); Mem. Opp. Proposed Cross-Mot. Partial Summ. J., ECF No. 673 (supplementing briefing on all four bases for prosecution history estoppel).) Specifically, Norton argues that Columbia is estopped from asserting the doctrine of equivalents because of: (a) Columbia’s addition of an “application community” limitation during the prosecution of the 115 Patent, (ECF No. 314 at 24–26); (b) Columbia’s addition of a “combined model” limitation during the prosecution of the 322 Patent (ECF No. 314 at 26–28);

(c) cancellation of all independent claims in the 115 Patent during *inter partes* review (ECF No. 314 at 29–30); and, (d) Columbia’s “random selection” argument regarding the 115 Patent during *inter partes* review (ECF No. 673 at 3–7.)

Although the Supreme Court has rejected the idea that prosecution history estoppel applies as a “complete bar to the doctrine of equivalents,” under amendment-based estoppel, it “established a presumption that a narrowing amendment made for a reason of patentability surrenders the entire territory between the original claim limitation and the amended claim limitation.” *Festo X*, 344 F.3d at 1365 (citing *Festo VII*, 535 U.S. at 741). A patentee, bearing the burden, may overcome this presumption—what is now known as the “*Festo* Presumption”—“by showing that ‘at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.’” *Id.* at 1365, 1368 (quoting *Festo VII*, 535 U.S. at 741).

The Supreme Court has recognized three ways in which the patentee can overcome the *Festo* Presumption: (1) “by demonstrating that ‘the equivalent [would] have been unforeseeable at the time of the [amendment];’” (2) by showing “that ‘the rationale underlying the amendment [bore] no more than a tangential relation to the equivalent in question;’” or, (3) by establishing “that ‘there [was] some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.’”<sup>50</sup> *Id.* at 1365 (quoting *Festo VII*, 535 U.S. at 740–41).

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<sup>50</sup> Although Columbia does not expressly limit its arguments to only one type of rebuttal to the *Festo* Presumption, its arguments and case citations focus only on tangential relationship arguments. Because Columbia bears the burden of rebutting the *Festo* Presumption, *Festo X*, 344 F.3d at 1368, the Court will consider only whether Columbia established that its amendments to the 115 Patent and the 322 Patent bear no more than a tangential relationship to the equivalent in question.

When considering whether the amendment bears a tangential relation to the equivalent in question, a court must consider “whether the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.” *Id.* at 1369 (citation omitted); *see also Chimie v. PPG Indus.*, 402 F.3d 1371, 1383 (Fed. Cir. 2005) (describing this as the “primary consideration” (citation omitted)). The court’s focus must be “on the patentee’s objectively apparent reason for the narrowing amendment,” which “should be discernible from the prosecution history record.” *Festo X*, 344 F.3d at 1369 (citation omitted). It must also consider “the context in which the amendment was made.” *Id.* at 1370. In making this determination, a court must look only to the prosecution history record “without the introduction of additional evidence” including “testimony from those skilled in the art as to the interpretation of that record,” unless looking to such testimony is “necessary.” *Id.*

Of importance to this case, the Federal Circuit has specified that “an amendment made to avoid prior art that contains the equivalent in question is not tangential; it is central to allowance of the claim.” *Id.* at 1369 (citing *Pioneer Magnetics, Inc. v. Micro Linear Corp.*, 330 F.3d 1352, 1357 (Fed. Cir. 2003)). Similarly, the Federal Circuit has concluded that “the rewriting of dependent claims into independent form coupled with the cancellation of the original independent claims creates a presumption of prosecution history estoppel.” *Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1134 (Fed. Cir. 2004) (en banc). In this situation “the correct focus is on whether [the] amendment surrendered subject matter.” *Id.* at 1144 (quoting *Ranbaxy Pharms., Inc. v. Apotex, Inc.*, 350 F.3d 1235, 1240 (Fed. Cir. 2003)). “Under such circumstances, the surrendered subject matter is defined by the cancellation of independent claims that do not include a particular limitation and the rewriting into independent form of

dependent claims that do include that limitation.” *Id.* “Equivalents are presumptively not available with respect to that added limitation.” *Id.*

As identified earlier, “Prosecution history estoppel can occur in two ways: either (1) by making a narrowing amendment to the claim (‘amendment-based estoppel’) or (2) by surrendering claim scope through argument to the patent examiner (‘argument-based estoppel’).” *Amgen Inc. v. Coherus BioSciences, Inc.*, 931 F.3d 1154, 1159 (Fed. Cir. 2019) (citation and internal quotation marks omitted). “Because an [*inter partes* review] proceeding involves reexamination of an earlier administrative grant of a patent, . . . statements made by a patent owner during an [*inter partes* review] proceeding can be considered during claim construction and relied upon to support a finding of prosecution [history estoppel].” *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1361 (Fed. Cir. 2017). However, “[t]o invoke argument-based estoppel, ‘the prosecution history must evince a clear and unmistakable surrender of subject matter.’” *Amgen*, 931 F.3d at 1159 (quoting *Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys.*, 347 F.3d 1314, 1326 (Fed. Cir. 2003)). The Federal Circuit has “stated on numerous occasions that whether prosecution history estoppel applies, and hence whether the doctrine of equivalents may be available for a particular claim limitation, presents a question of law.” *Festo X*, 344 F.3d at 1367–68.

## **2. Prosecution History Estoppel Does Not Bar Columbia’s Identified Doctrine of Equivalents Arguments**

Because Columbia has rebutted the *Festo* presumption as to the amendments it made during the initial prosecution of the 115 and 322 Patents, the Court will grant summary judgment in Columbia’s favor that prosecution history estoppel does not apply to those amendments. The Court will also grant summary judgment to Columbia on Norton’s amendment-based *inter partes* review estoppel argument because Norton has not shown that, as a matter of law, amendment-

based prosecution history estoppel applies to *inter partes* review proceedings and, even if it did, Columbia has rebutted the *Festo* presumption as to that argument.

a. **Columbia Has Shown That Amendments Made to the 115 Patent Were “Merely Tangential”**

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Columbia added to the 115 Patent a limitation to some proposed patent claims in response to the PTO’s rejection of those proposed patent claims. However, that limitation was an entirely new limitation, unrelated to the reason the PTO rejected the proposed patent claims. Therefore, even if the *Festo* Presumption applied, Columbia has successfully rebutted it by showing that the amendment was “merely tangential.” *See Festo X*, 344 F.3d at 1370.

After Columbia filed the patent application that would become the 115 Patent, the PTO rejected certain claims “as being anticipated by Vu,” a prior patent, explaining that “Vu disclose[d] creating a combined model from at least two models created using different computers” and “creating a combined model from at least two models created at different times.” (ECF No. 321-28 at 27.)

In response to the PTO’s rejection, Columbia amended some of the proposed patent claims of the 115 Patent, including claims 1, 11, and 21, to state that “upon identifying the anomalous function call, notifying an application community that includes a plurality of computers of the anomalous function call.” (ECF No. 321-28 at 11–13.) In its remarks on these amendments, Columbia stated that “Vu does not show or suggest notifying an application community of the anomalous function call.” (ECF No. 321-28 at 19.) “At most, Vu mentions providing an error message that includes information about the failure mode.” (ECF No. 321-28 at 19.) After evaluating these amendments, the PTO issued a Notice of Allowability and approved the revised claims. On December 6, 2011, the PTO issued the 115 Patent with revised claims 1, 11, and 21 becoming claims 1, 11, and 21 of the 115 Patent.

In the Partial Motion for Summary Judgment, Norton argues that “the Court should presume that the patentee surrendered all subject matter between the broader language (i.e., the claim language without the ‘application community’ limitation) and the narrower language (i.e., the claim language with the ‘application community’ limitation), including all equivalents to the ‘application community’ limitation.”<sup>51</sup> (ECF No. 314 at 25.)

Columbia counters that “the application community limitation was an *entirely new and additional* limitation, and the amendment did not concern the way in which notification is achieved.” (ECF No. 325 at 25.) Columbia maintains that at trial it will focus its doctrine of equivalents argument on Norton’s contention that it did not infringe on the 115 Patent because the 115 Patent requires *direct* notification from customer to customer. Columbia concedes that it “might not be able to assert equivalents when a hypothetical accused product does not provide *any* kind of notification to a community.”<sup>52</sup> (ECF No. 325 at 26 (emphasis in original).) But Columbia contends that “there is no justification for blocking Columbia from asserting that Norton’s *method* of notification is an equivalent when the method of notification was not at issue during prosecution.” (ECF No. 325 at 26 (emphasis in original).)

Even assuming that the *Festo* Presumption applied to claims 1, 11, and 21, Columbia has rebutted the presumption by showing that the application community limitation bore only a

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<sup>51</sup> In support of its argument, Norton looks to the doctrine of equivalents analysis of Columbia’s proposed infringement expert, Dr. Bailey. However, when considering whether prosecution history estoppel applies the Court must consider Columbia’s “objectively apparent reason for the narrowing amendment.” *Festo X*, 344 F.3d at 1369. Only the prosecution history record, and not additional evidence may be evaluated, including “testimony from those skilled in the art as to the interpretation of that record” unless it is “necessary.” *Id.* Here, the Court can readily interpret the prosecution history record without resorting to expert testimony. Therefore, the Court will not consider Dr. Bailey’s doctrine of equivalents arguments.

<sup>52</sup> Clearly, prosecution history estoppel bars Columbia from making an equivalence argument that a product that provides no notification infringes on the 115 Patent.

tangential relationship to the equivalent of whether the 115 Patent requires direct notification.

*See Festo X*, 344 F.3d at 1365. The Court must primarily consider Columbia’s “objectively apparent reason for the narrowing amendment” as it can be discerned from the prosecution history record. *Id.* at 1369; *Chimie*, 402 F.3d at 1383. Here, the PTO rejected the claims of the 115 Patent because the prior art disclosed certain ways of creating models. In response, Columbia amended the proposed patent claims to include a limitation that identified *how* the patent would provide notification of a possible intrusion. Although Columbia recognized that “Vu does not show or suggest notifying an application community of the anomalous function call,” (ECF No. 321-28 at 19), the prosecution history record does not demonstrate that the PTO’s rejection of claims 1, 11, and 21 over the prior patent, Vu, constitute Columbia’s reason for adding the application community limitation. Therefore, “the rationale underlying the amendment [bore] no more than a tangential relation to the equivalent in question.” *Festo X*, 344 F.3d at 1365; *see also Intervet Inc. v. Merial Ltd.*, 617 F.3d 1282, 1291–92 (Fed. Cir. 2010) (concluding that prosecution history estoppel did not bar the patentee from arguing that an equivalent infringed on the patent where, although it had amended the patent claims during prosecution, the amendment “bore only a tangential relation to” the alleged equivalent).

Therefore, even assuming that the *Festo* Presumption applied, Columbia has rebutted the presumption attached to the amendment-based prosecution history. Further, the Court concludes that no genuine dispute of material fact exists as to the “application community” limitation during the prosecution of the 115 Patent. Columbia is entitled to judgment as a matter of law on this issue. Therefore, the Court will deny the Partial Motion for Summary Judgment on Columbia’s infringement claim in Count Five and instead grant summary judgment in favor of Columbia. That is, Norton is precluded from making this prosecution history estoppel argument

to a doctrine of equivalents theory that Columbia asserts at trial. The Court turns now to the prosecution history of the 322 Patent.

**b. Columbia Has Shown that Amendments Made to the 322 Patent Were “Merely Tangential”**

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As to the 322 Patent, Columbia rewrote certain proposed patent claims from a dependent form to an independent form after the PTO indicated that such a change would result in the proposed patent claims being allowable. Although this type of change generally gives rise to prosecution history estoppel, Columbia has rebutted the *Festo* Presumption by showing that the amendment was “merely tangential.” *See Festo X*, 344 F.3d at 1370.

As with the 115 Patent, after Columbia filed the patent application for the 322 Patent, the PTO rejected certain patent claims. The PTO pointed out that certain proposed patent claims—claims 44, 45, 54, and 55—“are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” (ECF No. 321-29 at 28.) Claims 44, 45, 54, and 55 contained limitations that identified how the model would be created: either “from at least two models created at different times” or “from at least two models created using different computers.” (ECF No. 321-29 at 10.)

One of the reasons the PTO rejected certain of Columbia’s other proposed patent claims was because two prior patents—the Vu and Hasse patents—disclosed the general method explained in the original proposed patent claims of the 322 Patent. For instance, the PTO identified that the Vu and Hasse patents, when combined, would “be able to compare a function call and identify the function call as anomalous based on the comparison.” (ECF No. 321-29 at 26.) The Vu and Hasse patents also disclosed “modifying the function call” and “generating a virtualized error.” (ECF No. 321-29 at 26.) Although the PTO pointed out that the Hasse patent

“disclose[d] that the model reflects normal activity of the at least a portion of the program,” which looks to the information included in the model, the PTO did not reject any of the proposed patent claims based on *how* the patent created the model. (ECF No. 321-29 at 25–28.)

In its response to the PTO’s rejection, Columbia rewrote claims 44 and 45 to be independent claims and cancelled claims 45 and 55. In its accompanying remarks, Columbia stated that it “wish[ed] to thank the Examiner for indicating that dependent claims 44 and 54 contain allowable subject matter and would be allowable if rewritten in independent form including all of the limitations of the based claim and any intervening claim.” (ECF No. 321-29 at 18.) Therefore, Columbia “amended dependent claims 44 and 54 to include the limitations of independent based claims 43 and 53.” (ECF No. 321-29 at 18.) The newly amended patent claims included a limitation that the “model is a combined model created from at least two models created using different computers.” (ECF No. 321-29 at 10, 12.) Therefore, claims 44 and 54 now indicated specifically *how* the patent would create the model.

Columbia also “amended independent claims 43 to incorporate dependent claim 45 and independent claim 53 to incorporate dependent claim 55.” (ECF No. 321-29 at 17.) The PTO had indicated that claims 45 and 55 would be allowable if Columbia rewrote them as independent claims “including all of the limitations of the based claim and any intervening claim.” (ECF No. 321-29 at 18.) Newly amended patent claims 43 and 53 now included a limitation that the “model is a combined model created from at least two models created at different times.” (ECF No. 321-29 at 10–11.) Like amended claims 44 and 54, amended claims 43 and 53 now indicated how the patent would create the model.

The Federal Circuit has concluded that “the rewriting of dependent claims into independent form coupled with the cancellation of the original independent claims creates a

presumption of prosecution history estoppel.” *Honeywell Int’l, Inc.*, 370 F.3d at 1134. At first glance, this appears to be what Columbia did. However, the Federal Circuit has also recognized that, when a patentee has rewritten a dependent claim into an independent format, it does not automatically mean that prosecution history estoppel bars all equivalents arguments. *See Funai Elec. Co., Ltd. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1369 (Fed. Cir. 2010).

In *Funai*, after the PTO rejected certain independent claims and allowed certain dependent claims that formerly depended on those independent claims, the patentee “simply cancelled the rejected claims, and rewrote [the former dependent] claim . . . in independent form.” *Id.* The PTO then issued the patent, including the newly amended independent claim. *Id.* In affirming the district court’s denial of summary judgment on a prosecution history estoppel argument, the Federal Circuit concluded that prosecution history estoppel did not preclude the patentee from making certain equivalent arguments. *Id.*

In reaching this conclusion in *Funai*, the Federal Circuit looked to the reasons that the PTO rejected the independent claims. The *Funai* court noted that “the nature of the insulating material” (the limitation disclosed in the formerly dependent claim that the patentee rewrote as an independent claim) “was not a factor in the allowance of” the formerly dependent claim because it “was not at issue during prosecution.” *Id.* While acknowledging the *Honeywell* presumption—the presumption that prosecution history estoppel applies when a patentee rewrites a dependent claim in an independent form and cancels the former independent claim—the Federal Circuit concluded that the limitation formerly included in the dependent claim fell “in the category that the Court called ‘merely tangential’ to the prosecution, as discussed in *FestoId.*

This case is similar to *Funai*. Here, after the PTO rejected the proposed independent patent claims, Columbia rewrote formerly dependent claims 44, 45, 54, and 55 as independent claims, adding a limitation discussing how the patent created the model. During the prosecution of the 322 Patent, the PTO did not reject any proposed patent claims based on the way that the patent created the model. Rather, the PTO rejected the proposed patent claims for other reasons, including that the prior patent Hasse disclosed a limitation that dealt with the information contained in the model. Indeed, the PTO highlighted the limitations contained in formerly dependent claims 44, 45, 54, and 55, which disclosed how the model was to be created, “would be allowable if rewritten in independent form.” (ECF No. 321-29 at 28.)

Therefore, like the amendments in the 115 Patent and the amendments in *Funai*, the 322 Patent’s amendments are “merely tangential to the prosecution.” *Funai*, 616 F.3d at 1369 (internal quotation marks omitted). For this reason, even if the *Festo* Presumption applied, Columbia has rebutted it with regard to the amendments made to the 322 Patent. The Court concludes that no genuine dispute of material fact exists as to this “combined model” limitation. Columbia is entitled to judgment as a matter of law on this argument. Therefore, the Court will deny the Partial Motion for Summary Judgment on Columbia’s infringement claim concerning the 322 Patent in Count Six and instead grant summary judgment in favor of Columbia on this issue.

**c. Columbia is Not Estopped from Asserting the Doctrine of Equivalents Based on Amendments Made to the 115 Patent During *Inter Partes* Review**

Norton argues that prosecution history estoppel also applies to the 115 Patent because the PTAB rejected the independent patent claims of the 115 Patent during *inter partes* review. Columbia responds that no court has applied amendment-based prosecution history estoppel to

*inter partes* review proceedings, meaning that Norton cannot show that the *Festo* presumption applies, much less that Columbia has failed to refute it on this point. Although one court Norton mentions *has* applied prosecution history estoppel to *inter partes* review proceedings, that court considered argument-based estoppel—a different type of prosecution history estoppel than the amendment-based estoppel on which Norton rests its contentions. *See Not Dead Yet Mfg., Inc. v. Pride Sols., LLC*, 265 F. Supp. 3d 811, 830–32 (N.D. Ill. 2017); (Reply Partial Mot. Summ. J. 19, ECF No. 333 (“It is true that *Not Dead Yet* . . . related to *Festo* argument-based estoppel, not amendment-based estoppel as at issue here.”).) As Columbia notes, there is no law to support that the mere “*fact* of claim cancellation during IPR” without any accompanying arguments made by Columbia gives rise to the *Festo* presumption. (ECF No. 325 at 30.) In essence, Norton asks this Court to make new law that *amendment*-based estoppel applies in *inter partes* review because “there is no reason to draw a distinction between argument and amendment-based estoppel in *inter partes* review.” (ECF No. 333 at 19.) The Court declines to do so. And, even if the *Festo* presumption applied, Columbia has refuted it because the limitations in the dependent claims that survived *inter partes* review are unrelated to the cancellation of the independent claims.

Because the Court finds that, as a matter of law, estoppel does not apply to the amendments made to the 115 Patent during *inter partes* review, the Court will deny Norton’s Motion for Summary Judgment on this ground and instead grant Summary Judgment in favor of Columbia.

**d. Columbia is Not Estopped from Asserting the Doctrine of Equivalents as to the 115 Patent Based on “Random Selection” Arguments Made During *Inter Partes* Review**

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As the Court noted earlier, it considers Norton’s argument-based estoppel defense waived pursuant to Norton’s December 17, 2021 Response. (See ECF No. 682.) However, because Norton did not expressly disavow introducing its argument-based estoppel defense in every context (such as at the jury trial), the Court will explain why Columbia would be entitled to summary judgment on the issue of argument-based estoppel in any event.

Norton raised argument-based estoppel in the Proposed Joint Pretrial Order, (see Proposed Joint Pretrial Order 70–71, ECF No. 555), and the Response in Opposition to Columbia’s Proposed Motion for Partial Summary Judgment, (see Mem. Opp. Proposed Cross-Mot. Partial Summ. J. 5–7, ECF No. 673). Specifically, Norton asserted that the functionality in Norton’s accused products is substantively the same as functionality Columbia distinguished in *inter partes* review to refute Norton’s invalidity-based-on-obviousness argument. Here, Norton sought to ““ensure that claims are not argued one way in order to maintain their patentability and in a different way against accused infringers.”” (ECF No. 673 at 5 (quoting *Aylus*, 856 F.3d at 1360.))

The language at issue during *inter partes* review was the phrase “randomly selecting the model as to be used in the comparison from a plurality of different models relating to the program” contained in claims 9, 19, 30, and 40 of the 115 Patent. (ECF No. 631-4 at 3.) Norton argued to the PTAB that Columbia should not have been able to patent these claims under 35 U.S.C. § 103(a) because “[o]ne of ordinary skill would recognize that it was obvious to randomly select a subset of a group of computing choices.” (ECF No. 631-5 at 10.) Norton relied on U.S. Patent 7,334,005 (the “Sobel Patent”) as prior art that evidenced obviousness because the Sobel

Patent “disclos[ed] a method for ‘providing software updates to a random sample of computers.’” (ECF No. 631-5 at 10.) Columbia argued in response that Sobel “was specifically directed to ‘providing *software updates* to a random sample of computers,’ not to any random selection of any type.” (ECF No. 631-6 at 13.) The PTAB agreed with Columbia that “[Norton] characterize[ed] Solbel’s teachings too broadly” and was not “relevant to the inquiry” because ‘Sobel is directed to ‘providing software updates to a random sample of computers,’ not to randomly selecting models.” (ECF No. 631-7 at 5.)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (ECF No. 629-1 at 9.) Columbia argues that this is a “literal infringement” claim, which would not be affected by a prosecution history estoppel defense, and it only alleges the doctrine of equivalents as an alternative. (ECF No. 629-1 at 9.) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (ECF No. 673 at 6.) That is, Norton avers “Columbia accuses the very functionality it told the PTAB was not within the scope of the claims.” (ECF No. 673 at 5.)

However, the limited discussion of the Sobel Patent during *inter partes* review would manifestly show that the Sobel Patent did not result in “narrow[ing] the scope” of the 115 Patent,

much less “clear[ly] and unmistakabl[y] surrender[ing] [the] subject matter” Columbia accuses.

See *Eli Lilly & Co. v. Apotex, Inc.*, 837 F. App’x 780, 784 (Fed. Cir. 2020); *Amgen Inc. v. Coherus BioSciences, Inc.*, 931 F.3d at 1159. Columbia’s argument to the PTAB did not reference the functionality of the 115 Patent at all; it argued instead that the Sobel Patent Norton introduced did not have a monopoly on randomization as a concept, which the PTAB agreed with.<sup>53</sup> Nor did the PTAB itself narrow the scope of the 115 Patent. It merely referenced the exact language in the 115 Patent to explain why the Sobel Patent was “not relevant” to the conversation of patentability. (ECF No. 631-7 at 5.) “If the amendment was not narrowing, then prosecution history estoppel does not apply.” *Festo X*, 344 F.3d at 1366.

It will be up to the finder of fact to determine whether Norton’s accused products function in a manner that literally or equivalently infringes on the 115 Patent. But, as a matter of law—because no disputes of fact exist as to what Columbia argued in front of the PTAB and prosecution history estoppel “presents a question of law,” *Festo X*, 344 F.3d at 1367–68—

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<sup>53</sup> Indeed, the extent of Columbia’s briefing to the PTAB was the following two sentences:

[Norton] cites Sobel as support for it being “obvious to randomly select a subset of a group of computing choices.” Pet. 41. Sobel does not teach that. Ex. 2030 at ¶ 205. It was specifically directed to “providing software updates to a random sample of computers,” not to any random selection of any type. *Id.*; Pet. 41 (emphasis added).

(ECF No. 631-6 at 13.) Likewise, the PTAB’s discussion of this point was similarly succinct:

Finally, [Norton] cites Sobel (Ex. 1011) as support for it being “obvious to randomly select a subset of a group of computing choices.” Pet. 41. Petitioner characterizes Sobel’s teachings too broadly. Ex. 2030 ¶ 205. Sobel is directed to “providing software updates to a random sample of computers,” not to randomly selecting models. Pet. 41. Thus, we are not persuaded that Sobel is relevant to the inquiry here.

(ECF No. 631-7 at 5.)

prosecution history estoppel would not prevent Columbia from asserting the doctrine of equivalents as to the relevant claims in the 115 Patent because of the “random model” arguments it made to the PTAB.

Therefore, regardless of Norton’s waiver of its amendment-based estoppel defense, it would fail as a matter of law.<sup>54</sup>

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<sup>54</sup> Much of Columbia’s briefing on prosecution history estoppel before Norton’s December 17, 2021 filing discussed whether Norton had already waived its Estoppel arguments. For the reasons stated earlier, Norton’s prosecution history estoppel defenses fail as a matter of law regardless of whether Norton explicitly or implicitly waived them throughout this litigation. In light of the Court’s holding on Prosecution History Estoppel here, and Norton’s withdrawal of its request for a bench trial on Prosecution History Estoppel issues, (see ECF No. 682), the Court now considers all defense of prosecution history estoppel resolved.

IV. Conclusion

For the foregoing reasons, the Court grants in part and denies in part the Partial Motion for Summary Judgment. (ECF No. 312.) Specifically, the Court will grant summary judgment on Columbia's unjust enrichment claim to the extent it relies on the 2006 NICECAP Draft Proposals and the confidentiality requirements of the NDA. The Court also will grant summary judgment on Columbia's conversion claim. However, the Court will deny summary judgment on Columbia's fraudulent concealment claim. The Court will grant summary judgment in favor of Columbia on whether prosecution history estoppel forecloses Columbia's arguments under the doctrine of equivalents as to Columbia's remaining infringement claims pertaining to the 115 and 322 Patents. In the interest of clarifying information relating to the remaining issues for trial, the Court will also order the parties to submit a joint stipulation as to the definition of the term "anomalous" within fourteen (14) days.<sup>55</sup>

An appropriate Order shall issue.

Date: 12/23/2021  
Richmond, Virginia

  
M. Hannah Lusk  
United States District Judge

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<sup>55</sup> The Court is aware that Columbia stipulated to Norton's definition of the term anomalous as "deviating from normal" on October 31, 2019. (Pl. Resp. Notice Proposed Schedule 2, ECF No. 282.) The Court would like the joint stipulation on the record for purposes of trial.